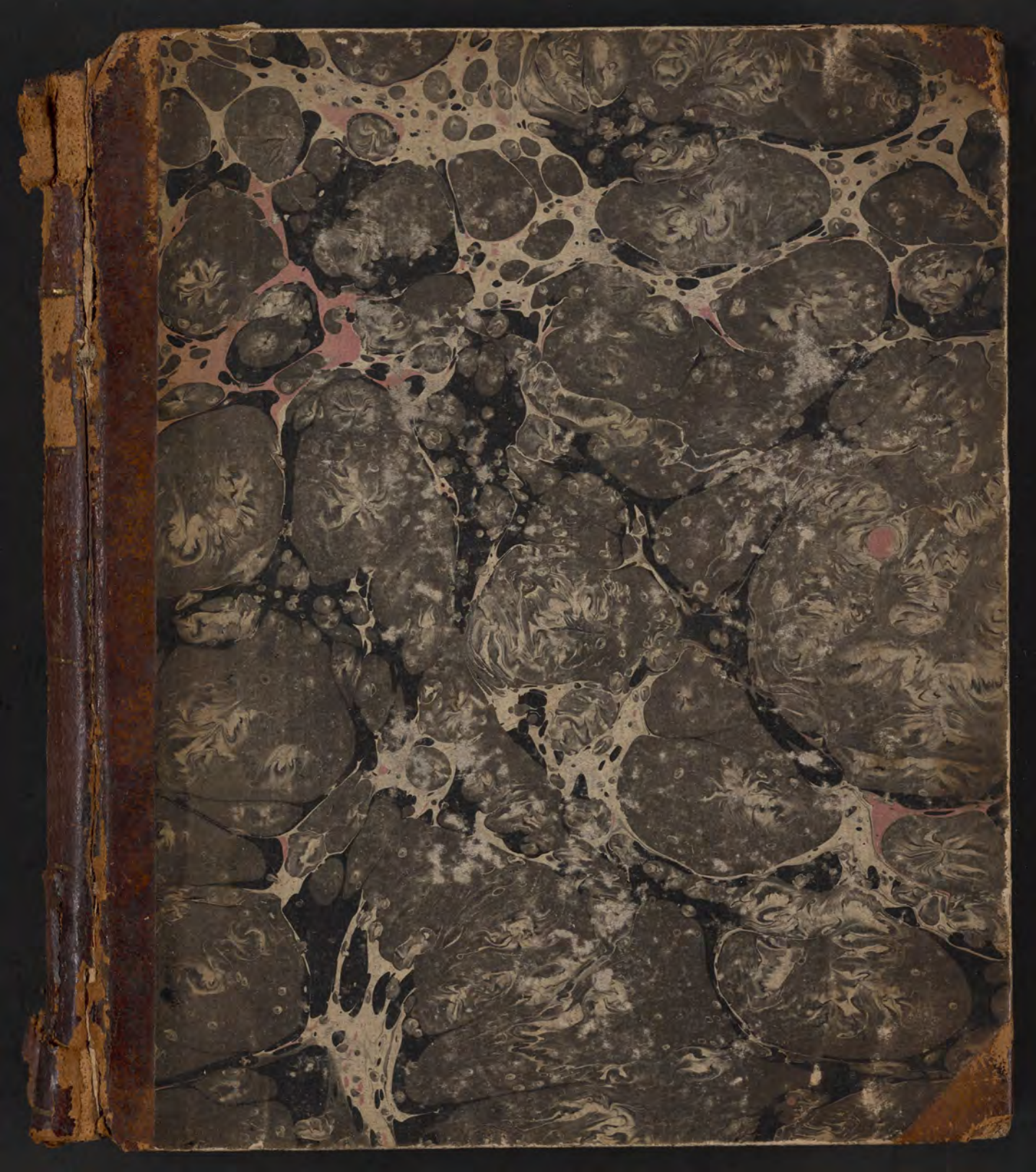

Vol 2°

Fractures of the Thigh

The O Femoris is most frequently fractured about its middle. Sometimes it is fractured near the lower extremity, & sometimes at the neck or upper extremity. –

When the fracture is transverse the treatment is much more simple than when oblique, tho' we most generally find them of the latter description.

When the fracture is about its middle it is generally oblique, the inferior fragment is pulled upwards & passes behind the superior forming a tumour. The limb is often bent at the point of fracture – Pain is severe & the Patient is unable to move the leg. There is considerable deformity in almost every case either from the fractured limb being

shorter than the sound one, or from its having a protuberance on one side in consequence of the broken ends being externally displaced. — In oblique fractures the limb is considerably shorter, 1 or 2 inches. This shortening of the limb occurs from the strong muscles surrounding the bone drawing the inferior fragment upwards & behind the superior. —

When the fracture is transverse & the two extremities have not slipped there is no shortening of the limb — the difficulty is not so great as when the fracture is oblique. The limb rests on its outside. If any motion be given to the fragments crepitation will be perceptible & the muscles will be thrown into spasmodic & convulsive motions — The Patient is unable to move the limb — Such are the signs of the existence of this fracture

Treatment. When the fracture is transverse, the common dressings such as are used in Fractures of the Os Humeri are to be employed, bandages being passed from the knee to the Hip over the Common Splints. The fragments will support each other.

But when the fracture is Oblique the muscles being so strong they draw the inferior fragment upwards & behind the superior, one riding over the other as it were. In this case some apparatus to counteract the muscles in displacing the fragments is necessary. — The bones must be replaced the point for extension is just above the ankle, for counterextension the Pelvis.

The fragments are generally replaced without much difficulty, the great difficulty is to keep them in their proper situation. The Ancients were accustomed to pass a bandage round the thorax & under the arms, & fasten

the upper part of the body to the head of the bed – another was fastened to the ankle & drawn to the foot of the bed, & thus the extension & counterextension were made. But here the body is not sufficiently fixed, the buttocks sink down in the bed, the portions of the fractured bone pass beyond each other. – Various other methods have been used but it is unnecessary here to mention

Mr Pott advises the thigh to be bent on the Pelvis, & the leg on the thigh, the muscles being then relaxed wd not draw the fragmts beyond each other. – I have never seen this succeed, there are many objections to it –

1 As the Patient lies on this side I must be kept so, so the body rests on fewer points, & must be very uneasy & irksome to the Patient. The strait position of the limb is easiest after a few days, this is proved by the testimony of a Patient who was first treated in the bent & afterwards in the strait position of the limb. – The Patient at the same time has

the advantage of lying on his back.

The position of the fragments are also changed when the Patient moves wh he is very apt to do — This position cannot be continued longer than 24 hours —

2d Another objection to Mr Potts bent position is that the Surgeon cannot be certain that the limb is accurately set as he cannot compare its length with that of the other. —

3d When this is attempted it is necessary to lift up the Patient every time a bed pan is used, in this way danger is incurred of seperating the fragments —

4 The Pelvis is always rendered more or less crooked —

In order to retain the lower fragments & to counteract the action of the muscles effectually it is necessary to continue thro' the whole of the treatment the extension employed in reducing the fracture — This is very effectually

done by the apparatus of Desault as improved by myself. The procedure is as follows

In the first place provide a hair mattrass, this is to be laid on a very tight sacken bottom, or on boards laid across the bedstead as this will prevent any sinking. & for the same reason when the Patient is put to bed he shd have but one or at most 2 pillows, as more elevation wd tend to make him slide down in the bed.

2d Three or 4 pieces of tape are to be laid transversely across the mattrass

3d Over these a piece of cloth 3 feet square to wrap up the splints

4 A bandage of Strips one laid close to the other, their edges just meeting.

5 Three splints of Pasteboard or Shingle

6th Be provided with 2 strong bandages one to pass on the upper part of the thigh at the tuberosity of the Ischium, the other over the foot. Silk handkerchiefs will be best

When the Patient is placed on the bed Extension & Counterextension are to be employed to place the fragments in their proper situation. With this view pass the bandage under the thigh & round the Perineum so as to make Counterextension, while the assistants make the extension by drawing the bandage fastened to the ankle — This bandage shd be passed round the foot on the ankle fastened on the instep & tied at the bottom of the foot. — The Surgeon then puts the bones in apposition. When this is done commence the application of strips from the knee up to the hip. These strips shd not be tight, just so as to make moderate compression, for they can have no effect in retaining the fragments of bone, only by their pressure they tend to weaken the action of the muscles. — 'Tis useful also in preventing those convulsive twitches at occur —

Three Splints are next to be applied — One very long extending from the arm pit to some dis-

tance beyond the toes. This shd be first wrapped up in the broad piece of cloth wh the Patient lays on. In this large splint there are 2 holes in the upper extremity for the straps passing round the tuberosity of the Ischium to go thro'. They are all to be tied on the outside. There is also a hole at the bottom for the bandage to pass thro' wh is tied to the bottom of the foot.

The splint wh is applied on the inside must reach fm the Crotch to beyond the toes, this must be wrapped up in the other piece of cloth.

The third splint wh is to be applied on the anterior part of the thigh must be pretty broad, & long enough to reach fm the superior part of the thigh to near the knee. Now fill up the vacuities between the splints, & thigh & leg with folds of flannel, or what is better bags of chaff. Next wrap the junk cloth round the splints to keep them fm slipping up.

then tie the tapes over the whole. A broad bandage is then to be applied round the hips & lower part of the back & pelvis, and round the external splint, to keep it & the Pelvis together. It shd be passed several times round & round — Prevent this broad bandage from slipping up by pinning it to the handkerchief for counterextension on the affected side. On the other pass a strip of linen between the thighs & pin it to the broad bandage above. The handkerchief for Extension & Counterextension shd be carefully examined every day & tightened if necessary for they often become relaxed, & thus require particular attention. —

When the bandage for making extension is first applied on the lower part of the leg & over the ankle, the muscles contract with an unnatural & spasmodic force, & the force used to make the limbs of the same length must be very considerable. — If the muscles

powerfully resist the extending force, the Surgeon sh^d not be too solicitous to extend the thigh completely in the first instance, for by dressing & afterwards keeping up the extension, the muscles will give way, & by tightning the bandages whenever they become relaxed, in 2 or 3 days the limb will be found as long as the other. Bandages have been applied with so much pressure as to stop the circulation, & thus produce excoriation inflam^n & gangrene. It is not necessary & will be exceedingly wrong to draw the extend^g bandages tight at first. Much force never sh^d be applied when the muscles contract in this manner, only moderate tightness sh^d be used, the next day you may increase it, & so on at each successive day, for the muscles will readily yeild to pressure & the extending powers.

When the inferior fragment is fixed, cease with the extension.

The bandage on the lower part of the leg

the sole of the foot will get too compact just like a rope, & the pressure on the part produces great pain. In this case a new handkerchief shd frequently be applied. Some skins are so irritable indeed that they cannot bear the least pressure here I have employed with success an apparatus wh prefers equally over the whole posterior part of the leg & anterior part of the foot this is effected by a piece of leather like a shields boot with laced strings – It does not cover the sole of the foot – Buckskin is the best kind of leather as it slips less. I had this contrivance made for a patient of mine, whose skin was exceedingly tender, & who told me he was unable to bear the bandages any longer – After this leather was applied he made no further complaints, & suffered me to make what extension I pleased.

Under the head I applied layers of flannel, & cut a hole opposite to the painful part.

John Bell has written against the Apparatus of Desault for maintaining perma-

nent extension in fractures of the thigh; but he happens never to have used it. I have had a great deal of experience of its efficacy. it effectually prevents the shorten^g of the limb, w^h is prevented by no other method at present employed.

My Bandages & apparatus differ materially fr Dupaults. His splint passes fr the Crista of the Ilium to the sole of the foot My splint extends fr the Axilla & is in the form of a Crutch by thus lengthening the splint counterextension is borne partly by the arm pit, & partly by the groin, w^h thus dividing the pressure we avoid the irritation that w^d take place when the splint extends only fr the tuberosity of the Ischium. This is of no small consequence. When the bandage is borne only between the legs the pressure is so great as to produce pain, excoriation & at times death of the part, for

the part sloughing leaves an ulcer, & we are obliged to abandon this mode of treatmt. Since I have lengthened the Splint I have had no complaint of the pressure of the bandages between the legs.

Another advantage attending the long Splint is that the 2 holes thro' wt you pass the handkerchief for counter extension are higher up towards the arm. Now in the other Splint the holes being lower the bandage crosses the upper fragmt very obliquely, & with so much force that the bandage on the upper part of the thigh draws the upper fragment directly outward thus preventing the approximation of the fragments of the bone. When the bandage is passed less obliquely it acts more directly on the middle of the thigh, & has less effect in pulling the lower fragmt outwards. In the Splint wt I advise as it reaches up to the arm pit, the holes attaching the bandage are considerably higher up, so that the banda-

ges act more in the direction of the thigh, less obliquely, & also more in the direction of the trunk of the body. It acts more in this last direction if a strap be attached to it & passed round the body so as to make it act directly in the direction of the trunk of the body. It presses on the tuberosity of the Ischium & groin only, & acts directly on the limb not drawing the superior fragmt outward —

There are 2 other objections to Desault's Splint

1 In making the extension & counter extension the bandage passes so as to press the foot strongly against the splint, so much so as to produce pain excoriation &c

2d It turns the foot too much outwards, drawing the side of the foot out. — To obviate this Mr Hutchinson proposed fixing a block to the lower extremity of the splint so that the bandage round the foot might pass over it, & the extension made in a more direct line with the whole limb

I may mention here that one objection

to the strait position is the weight of the limb resting upon the most posterior part of the heel, wch gives pain, causes the loss of sleep. & finally if relief be not afforded, death of the part. — When a patient complains, covering the part with soft leather spread on ad: Plaister, if that shd not answer, a number of such pieces laid one on the other, & a hole cut thro' them directly opposite the part complained of. I have Rolled up bandages of flannel, sewed them under the heel, & cut a hole thro' them directly opposite the part —

Another method to make the extension of the lower extremity has been proposed by Joseph Hutchinson of the Penna Hospital wch is to be effected by having a circular machine wch shall fit round the upper part of the thigh & make pressure against the tuberosity of the Ischium & the Dorsum of the Ilium by means of 2 pads placed upon it — this machine is pierced

with holes. Two splints are to be employed of about the length of the limb - these are perforated with numerous holes to correspond with those just mentioned. The splints & the Machine are to be fastened together by strings passed thro' the holes. A strip of linen is then fastened to the foot, & then secured to the cross piece between the 2 splints, thus making extension & Counterextension.

Fractures of the Neck of the Os Femoris.

The neck of the Os Femoris is sometimes fractured close to the Trochanters; & sometimes within the Capsular ligament - that is the round head is broken off. As this part is thickly covered with Muscles it is sometimes difficult to ascertain the precise point of fracture. It may be known by the follow.g signs

1 The Patient will generally tell you he heard the crack

2° A sharp pain, & inability to extend the leg or raise it up.

3° In almost every instance the limb is shortened, 1 or 1½ inches, & the foot rests on the outside.

4 By extending the limb the Surgeon can bring it down to the same length with the other, & then upon motion being given to it grating of the fragm^t will be perceived.

5 If while the hand is applied to the great Trochanter the limb is made to rotate on its axis, the bony protuberance is ~~made to rotate o~~ perceived to turn on itself as on a pivot, instead of describing as it does in its natural state, the arch of a circle, the radius of w^h is the distance between the Acetabulum & the outside of the Trochanter. This sign is very perceptible when the fracture is at the root of the neck. — If it be fractured near the head the Trochanter will describe an arch but it will be less than when the bone is not broken.

6th The Patient can scarcely support himself but usually falls down — the limb rests on its outside & the foot falls over, & the inferior fragmt is often below the superior portion of the bone — The knee is a little bent — A severe pain accompanies the motions of subduction when they are communicated to the limb. The great Trochanter is directed upward & backward —

These are the Symptoms but it may be mistaken for a luxation upwards and backwards or upwards & forwards; for in this case the limb is also shortened, but there is a striking difference in the foot. — In a fracture the toes are always turned out, in a luxation they are turned inward & cannot be turned out. — In luxation there is no crepitation, you rotate the limb with great difficulty; & if you succeed, placing yr hand on the Trochanter it will describe a large circle & does not rotate on its own axis. — In the

fracture it is easy by moderate extension to make the limb of its proper length, but this is not the case with a luxation

In fractures of the neck of the Os Femoris, the fragments sometimes interlock, & no displacement or shortening of the limb takes place these cases are very rare, & it is difficult to determine whether a fracture exists or not

I must now impress on yr minds the necessity of one preparatory step. In the examination of an injured hip before you attempt to ascertain the extent of the injury lay yr patient down on a flat surface, & take care that the Pelvis is strait, for the motion of the spine may draw up the Pelvis, & make one limb shorter than the other. To ascertain this, feel for the Anterior superior spinous process of the illium, & when found draw a strait line across the body from one to the other process, if it intersects the body at right angles you may be certain the pelvis is strait;

if obliquely you may be sure it is not so. I once saw in an Infirmary abroad much embarrassment for not attending to this circumstance.

In all doubtful cases apply the apparatus for fractured thigh - if the fracture exists it cannot be cured without it; if it does not exist the patient will be put to only temporary inconvenience, a few days will determine whether fracture exists or not.

It has been generally supposed that fractures of the neck of the Os Femoris are incurable, but I dont see any reason for this opinion - when the fracture takes place without the Capsular it unites as readily as fractures of any other part of the body. But if the fracture occurs very near the Acetabulum bony union does not take place. On the contrary a kind of joint is formed & the Patient generally limps all his life afterwards - Add to this the consequences at-

tending the wound of a joint wh never fails to be at least troublesome & often dangerous. — In such cases we must expect difficulty in the cure. — The same apparatus as already described is to be applied, remembering not to pull the bandages for extension too tight at first but wait until the muscles yield. — V.S. ad deliquium animi may be used. The apparatus shd be continued for at least 3 or 4 months before the patient shd be permitted to make any attempt to walk. I have always continued it 3 months first.

Severe contusions of the Buttock sometimes exhibit marks of fracture or luxation here after putting the Pelvis strait compare the length of the limb — if after this any doubt remains apply the apparatus.

Fractures of the Lower end of the Femur.

Sometimes the Os Femoris is frac-

tured lower down just above the Condyls, the fracture is generally oblique, & slopes from below backwards. It is sometimes transverse when there is seldom much displacement. We most generally however find the fracture Oblique, in wh case the inferior fragmt is drawn by the flexor muscles before upwards & backwards. A considerable space intervenes between the edges of the fractured surfaces, & the weight of the leg pulls the lower fragmt down.

Extension & Counterextension are to be made if necessary. The same apparatus is to be applied with the addition of a thick pillow or 2 pillows placed under the leg at the place of fracture to support its weight & prevent lateral displacemt, & compresses of soft linen under the ham to counteract the weight of the leg in drawing the inferior fragment down. A pillow may also be placed above the thigh to keep the superior fragmt down.

The Condyls are sometimes seperated by a longitudinal fracture. It's easy to ascertain it by taking hold of the Condyls & moving them in opposite directions, you will hear a crepitation & be sensible of motion — I never saw but 2 instances — One occurred in a Maniac who leaped out of one of the upper stories of the L: Hospital & fell with his knee against the sharp edge of a wall. The superior fragment pierced the skin & penetrated the knee joint making a compound fracture. In such cases the same apparatus as already described — A long splint, moderate extension, compresses on each side of the knee; & bandages over them (avoiding too much pressure) form the proper mode of treatment

Fractures of the Patella.

These fractures are either transverse, oblique, or longitudinal; of ye last I never saw but one instance. The first occurs most frequently, & generally arises from some violence done to it from without, or from the violent action of the extensor muscles yt are inserted into it as in jumpg or dancing. The upper fragmt is drawn considerably upwards by the extensor muscles & the lower fragmt being attached to the Tibia remains stationary provided the leg is not bent backwards. By bending the thigh on the trunk & extendg the leg on the thigh you will hear the grating. When the fracture is transverse the Patient falls & cannot rise again - If placed on his feet he can stand or go backward; but if he

attempts to step forwards he falls again. As the bone is but thinly covered with soft parts the seperation between the fragm.ts is sensible to the touch. This seperation is increased by bending the leg & diminished by extending it. If the fragm.ts are brot into contact they may be moved in contrary directions & the crepitation will be perceptible

Treatment. — Having ascertained the existence of the fracture place the fractured surfaces in contact. Support the Patients head & shoulders with a pillow or some contrivance, & having the thigh bent on the Pelvis to relax the flexor muscles bring the inferior fragm.t towards the superior, extending the leg afterwards & keeping it so. — The Muscles being thus relaxed feel for & pull down the upper fragm.t & bring it in contact with the lower. Commence yr bandage then just above the Ankle & continue it up to the knee. When thus far

take care to pull up the skin so that it may not get into folds or puckers — Take care to have the fracture uncovered & prevent the skin from getting between the fragments. Apply 2 compresses one above the superior & the other below the inferior fragmt — securing them with a figure of 8 bandage crossing in the ham & going backwards & forwards over them. Cover the space intervening between the 2 compresses with the same bandage & continue it over the thigh up to the hip — The reasons for passing the bandage in this manner are the follow.g —

1 By passing the bandage from the ankle to the knee the vessels of the leg are supported & Oedematous swelling prevented —

2d The view in passing the bandage over the Patella is to keep the fragmts in contact —

3d The intention of continuing it from the knee to the hip is to compress the extensor muscles & keep them in a quiescent state —

When a sufficient number of these oblique turns of the bandage are made, make some circular turns so as completely to cover all the soft parts wh would otherwise swell very much. Next apply a broad long splint under the leg to maintain the extension of the leg on the thigh, wh sh^d have linen or leather glued to it, & the whole covered with soft flannel, taking care to put rolls of flannel or bags of chaff or some other soft substance between the splint & limb. Secure the splint by the bandage. The bandages must be only moderately tight, or you will have irritation inflam^n & other bad effects. If inflam^n occurs, it must be reduced by V.S. & other remedies. Attend to the bandage & frequently examine it for if the splint were to slip the fragment wd be displaced. In 7 or 10 days remove the dressings. The fracture generally unites in about 8 weeks

The same mode of treatment is necessary when the Patella is fractured obliquely. But when

longitudinally, nothing then is necessary to be done but to apply a circular bandage round the part.

As the fragm^ts in transverse fractures can rarely be kept in complete apposition, union generally takes place by a ligament wh^ch is often of considerable length. I have seen the uniting ligament 4 inches long. This is occasioned by the superior being drawn up & pulled away from the inferior fragm^t. In such cases if not properly managed patients will be lame for a considerable time if not for life.

The Patient sh^d be encouraged to perform the motion daily & his power of performing it will every day increase. He sh^d use it as soon as possible as soon as union is formed. The most convenient method is by sitting or lying on a table with the leg hanging over, & thus the Patient may swing it backwards & forwards at pleasure. Case of a lady who sat on a table not far from the wall of the room & completely

recovered the use of her limb by kicking at it frequently —

It is a very fortunate circumstance that a ligament forms instead of bone, as in that case the patient wd be incapable of performing flexion & extension, & he wd always have a stiff joint, as the bone wd act as a bar or splint to the leg —

Bones of the Leg —

They are generally fractured at the same place. Sometimes both bones are broken at once, often transverse at other times Oblique — The fracture may occur in the middle or at either extremity of the bone

When the fracture is transverse there is little displacemt especially in the Tibia — When oblique the inferior fragmt is drawn upwards & backwards behind the superior

When the fracture is transverse, it is

easy to ascertain its existence not only by the alteration in the shape of the limb when there is displacem^t but it bends at the fractured part, at w^h place there is also much pain, and by pulling the inferior fragm^t you will be sensible of Crepitation, & can feel the place with yr fingers

Treatment. Place the limb in an extended position w^h is to rest on a pillow but before you do this lay on the pillow a bandage of strips — On them 2 splints, then another bandage of strips, one nearly over the other (as in fractures of the O Femoris) all over the splints

After laying the patient on his Mattrass, raise the leg carefully, when the assistants are to make extension & counterextension — One with his hands applied to the heel & instep the other just below the knee keeping up the extension. — The bandage of strips is first to be applied — Next splints of pasteboard previously

soaked, one on each side of the leg, reaching fm above the knee to the sole of the foot. The splints shd extend thus far, otherwise the fragments will not be secure, the upper one wd rest on the Pillow, but the lower one wd go fm side to side. Tie the splints together above & below with the bandage of strips, wh is better calculated for this purpose than tapes. To keep the limb still more at rest 2 shingles or boards (the fracture box is better) one on the out, the other on the inside of the leg are to be applied outside of the pillows, & fastened by tapes.

A bandage is to be passed in this form X under the sole of the foot & reaching nearly up to the knee for further security — In 7 or 10 days remove the dressings, & see if the fragments are in their proper situation. Support the weight of the bed clothes by an arch — a hoop fm a flour barrel is very proper — In this way transverse fractures are easily managed.

In Oblique Fractures of the bones of the leg, when convulsive motions in the muscles occur, in such cases it is necessary to keep up a permanent extension by means of the Apparatus of Desault as improved by Dr Hutchinson. In this fracture there is a projection of the superior fragmt forwards & the inferior backwards. There is also an angular depression. —

First lay on the bed a parcel of strips say 9 — tis very customary to lay a strip of muslin across these bandages & sew it to them, but this is improper for if any derangemt of the strips shd take place or if any one shd become scrinkled if this strip were not sewed you could easily remove it, wt you can't do if it is sewed —

Two pieces of tape are to be applied on each side of the leg just below the knee & secured by the bandage of strips — always make it a rule that the strip last applied shd be laid down first — then a bandage round the lower

part of the leg for extension – the buckskin answers best, it is to be tied on the middle of the sole of the foot. – While extension & counterextension are making the bandage is applied & going up to the first bandage. Two splints are then to be applied to extend from the knee to 8 or 10 inches beyond the sole of the foot – Each splint has a Mortoise in its lower end, & a cross piece of wood is passed thro' these mortoises, & over it the handkerchief for extension is carried. – The tapes on each side of the leg are to be placed thro' the holes in the splints, to fix the upper part of it & to make counterextension – Pull the bandage round the lower part of the leg & sole of the foot for extension. Tie the bandage on the middle of the bar as it passes from one splint to the other to keep up the extension bag – Bags of chaff shd be placed between the leg & sides of the splint to fill up the interstices. – This method of treatment is very convenient in compound fractures

If the wound is on the upper part of the leg there is no necessity for moving the limb, the wound may be dressed without it & without removing any of the dressings except the strips of Rollet. — The chief inconvenience attend^g this mode of treatm^t is the bandage being obliged to be made so tight below the knee as to compress the Bruises produce swelling, & in some measure impede the circulation. — In this case I use the long splint of Desault w^h prepes on the tuberosity of the Ischium & axilla. After these dressings are applied lay the limb on a soft pillow & put it in a fracture box w^h answers better than the two boards w^h I mentioned. The foot board w^h it has is an advantage — some flannel sh^d be put over it — Another advantage w^h it possesses is that if inflam^n sh^d occur the box may be elevated, w^h elevates the limb, decreases the flow of blood by the Arteries, & favours its return by the veins. The bottom sh^d be scooped to fit the Calf of the leg —

Tibia.

When the Tibia is broken alone, there is sometimes difficulty in discovering the existence of the fracture. There is seldom much displacem^t as the Fibula acts as a Splint. Indeed a longitudinal fracture, or a shortening of the limb cannot take place. When the Fibula is broken alone the same occurs. It is sometimes extremely difficult to tell when the Tibia is broken alone for the Patient is often able to walk. There is pain at the place of fracture, & if the Surgeon grasps the limb above or below the place of fracture where the Patient complains of pain, the limb will bend there, he will feel a seperation of fragments & will at times hear the Crepitation there is no deformity in the limb. I once had a Patient who doubted so much of a fracture that after I left him he pulled off the Splints & got up & walked about the room. At last he found his leg to bend. I saw the angle at

it formed with his body.

The Treatment is the same as when both bones are broken. A bandage of strips must be passed from the ankle to the knee, & splints of pasteboard previously soaked in water applied on each side of the leg & secured by the many tailed bandage. The leg is then to be put in the fracture box. The Patient recovers in 5 or 6 weeks.

Fibula

When the Fibula is fractured alone, it generally gives way at the part wh is about 1/3 of the distance from the external ankle to the knee. It frequently happens from direct violence on it, a heavy body falling on it, or from its being struck with a stick or stone. It is frequently broken just above its middle but it most frequently happens from the violent

abduction of the foot when it is turned out — the fragments are driven in ~~towards~~ towards the Fibia. There is a depression on the outside — the ankle is altered in shape. — This fracture is in many cases accompanied with partial luxation, the Astragalus being pushed outwards. There is a depression at the fracture & grating of the fragments when moved

To Reduce this fracture one assistant makes the extension with his hands placed over the foot & heel. — The assistant for the Counterextension takes hold of the leg just below the knee By the extension & counterextension, not only the fracture but the luxation if any existed is reduced. —

The Treatment is the same as when both bones are fractured — When the fragments are put in apposition the bandages must act on the foot, for if they act on the leg they wd be of no service, & if a displacement took place we wd have an abscess & compound fracture —

The bandage of strips must be passed loosely from the Ankle to the knee, for if they were tight they wd push the fragments in towards the Tibia. — Having applied this bandage, 2 splints are next to be applied, one on the out & the other on the inside of the foot wh must be broad to extend quite as low as the sole of the foot, for if the foot be not supported the fragmts will have no support. Secure them by another bandage of strips, and put the leg in a fracture box on a pillow — Union will take place in 5 or 6 weeks

When any of the bones of the foot are fractured the treatmt wd be precisely the same as for a fracture of any of the Metacarpal bones already described. —

<u>The Pelvis</u> is sometimes tho' rarely fractured. — In one case that came under my notice the Ilium was fractured, there was great pain especially on attempting to move

& an almost inability to move. All that can be done is to keep the Patient at rest - Apply the simple broad roller round the Pelvis & bleed if necessary. But Purges shd be most positivelly forbidden as they will injure the Patient.

I saw one case in wch the Symphisis was seperated in wch the broad bandage was all that could be done. Union generally takes place in about 6 or 8 weeks

Over the bandages & Splints wch are used in different fractures it is customary to pour some liquor wch moderates inflam" - I generally use brandy & vinegar, or Oil & Vinegar.

Sometimes much deformity takes place after a fracture untilfully set, & we are applied to for the removal of it after bony union is effected. - In such cases what is to be

done? The practice of Surgeons has been to break the bone again, & once did this & succeeded completely. The Radius has been set in such an improper manner that the Patient could not perform the motions of pronation & supination. The limb considerably deformed fm angular projections on one side. — Perhaps it will be found that in cases of fractured thigh, it will be most frequently necessary to break it again. It wd perhaps be proper in every instance to try to bend the Callus right by a Splint.

We come next to speak of Dislocations

Dislocations.

When any of the articulating extremities of bones forming a joint is forcibly displaced & removed from its natural situation, it is said to be luxated or dislocated.

When this accident occurs the motion of the joint is very much impeded, or entirely lost, attended with spasmodic or involuntary contractions of the muscles, great pain & an alteration in the shape of the limb, the deformity is considerable. — It is easy to reduce dislocated bones soon after the accident but in cases where the bone has been suffered to lie out of its natural situation for any length of time, its reduction is very difficult. In recent cases the greatest obstacle to reduction arises from the violent & involuntary contraction of the muscles surround^g a joint,

the contraction of the Capsular ligam^t by lessening the cavity of the joint called the Glenoid Cavity, & the improper connection of the cellular membrane. – The ruptured Capsular ligam^t very seldom presents any obstacle to the reduction. For overcoming the action of the Muscles low diet & moderate V.S. have been recommended. I have found V.S. ad deliquium Animi to be the best and most efficacious practice, & it is perfectly safe I have generally drawn blood fr^m both arms at the same time – As soon as the Patient faints all the Muscles are completely relaxed & the bone may be easily replaced. – Purging, warm bath & Opium have been used; also different mechanic powers, but they injure the soft parts, & nothing can be more safe than V.S. – I first used it in the U States – Dr Monroe mentioned it in his lectures. Intoxication has been proposed to obviate the action of the Muscles. – I have had it in contemplation

to try what wd be the effect of exciting Nausea by Tart: Emet: & taken into the Stomach, or Glysters of Tobacco thrown up the bowels. —

The Muscles sometimes prevent the reduction for several weeks, but afterwards they accustom themselves to their natural situation, & cease to contract involuntarily. If the bone be suffered to lie out of its natural situation for some time, the involuntary contractions of the muscles cease. the bone contracts adhesions to the soft parts surround^g the joint, & round the Cartilage tipping the extremities. — When this occurs force by means of pullies &c is necessary to replace the bone French writers advice force to be used on the lower part of the limb, but this wd give too much to the joint. — In using force take care to apply it in such a way as to act on the affected joint only, for as the intervening joint wd be stretched, some of the force wd

be lost: add to this that it may injure the joint. — Let all the surround^g muscles be relaxed as much as possible &c

Luxations of particular parts

Maxilla Inferior

In luxations of the Jaw bone the patient is unable to shut his mouth, the power of Speech is lost, & the Saliva runs over the mouth. this bone is luxated directly forwards, or forwards & downwards. — It seldom occurs in consequence of external violence, but generally happens when the mouth is suddenly opened very wide, as in yawning — I once knew a case in a woman by vociferating in our marketh house. — Both the Condyloid processes may be luxated at once, or only one of them. When luxated they are fixed in the Zygoma in the place of the other Condyls, or over the tuberosity at the bottom of the Zygoma —

If the reduction be undertaken soon after the accident, it is generally easily accomplished. — The Patient must be seated. The thumbs are to be introduced into the mouth over the Molar teeth, & the fingers under the chin — then draw the jaw bone downwards sufficiently to dislodge the Condyloid processes from under the Zygoma, & at the same time force up the chin with the fingers. The muscles will then draw the bone in its place, if not, assist to press it back with the fingers. This method has always succeeded with me. As the jaws are apt to contract spasmodically as soon as the bone is replaced, it will be proper before introducing the thumbs into the mouth to defend them with a towel, or a piece of cloth wrapped round them. — Here no bandage is necessary but the mouth shd be used as little as possible for a few days, & it shd not at all be opened immediately after the reduction —

Cervical Vertebræ

I have never seen a luxation of the Cervical vertebræ without a fracture of the bone. — On this luxation see Boyer on the Bones. —

Clavicle. —

The Clavicle may be luxated at either extremity. When at the Sternum the extremity of the bone is generally pressed directly outward & forms a hard unnatural protuberance in the front of the Sternum. It is so thinly covered that the nature of the accident may easily be known in almost every instance. —

Luxation of the Scapula Extremity, is always effected by external force. The end of the Clavicle is elevated above the Acromion Scapula & may be reduced by elevating the arm. The shoulder is directly downward & inward. The weight of the arm pulls down the Scapula ex=

+ arm

tremity. The head is inclined to the affected side in luxations of either extremity

The Treatment is exactly the same as in fractures. The apparatus already described is to be applied, the bandage ⁊c passes under the elbow & over the shoulder — & continued for 2 months. — If it be taken off sooner the motions of the bone will displace the bone again. The bandages are frequently to be examined as they are apt to stretch & slip, in wh case they must be reapplied

Os Humeri. —

Of all the luxations in the body this is by far the most frequent, & that at the shoulder joint, owing to the greater latitude of motion wh this bone has, the smaller cavity with wh it is articulated, & being only secured by ligaments & muscles. — The luxation is generally downward & inward. This is by

for the most common but sometimes directly forward — Of this I have seen one instance only — In this case the head of the bone was at the edge of the glenoid cavity, between it & the Coracoid process of the Scapula. Sometimes it will be pulled by the muscle & lodged beneath the pectoral muscles. It is sometimes luxated directly backwards.

When the luxation is downward & inward the arm stands off from the thorax & cannot be brought to the body without great pain. By putting your hand in the axilla you will feel the round head of the bone. In all luxations of the Os Humeri there is a hollow underneath the acromion Scapula instead of the tumour wch is formed by the head of the Os Humeri. The arm may sometimes be moved backwards & forwards, but never can perform a circular motion. The Patient is unable to raise the arm & is generally found with

the arm flexed & supported by the other hand

Treatment. If called soon after the accident the Surgeon can generally reduce the luxation himself without any assistance. With the palm of the hand applied to the acromion scapula I push it backward for counter-extension, & the other hand on the O. Humeri just above the elbow joint for extension. An assistant may support the hand while the Surgeon makes extension & counterextension The surgeon pulls & raises the Humerus at the same time — In this way he will succeed in a majority of cases if called soon after the accident. —

When the luxation is not recent the above method will not succeed & considerable force is necessary. — In this case the elbow is to be flexed & 2 towels are to be applied to the arm just above the elbow joint by means of a roller — one on the inside & the other on the outside of the arm — the towels are then

to be doubled over & their ends fastened to each other by wh 2 or 3 assistants may pull to make the extension. — For Counterextension an assistant stands behind the patient & places his fingers over the Acromion Scapula. Another assistant stands before if necessary & pushes against the Acromion his fingers being placed over those of the first assistant — & here I must remark that the extending & counterextending powers must be exactly equal. — The arm must be bent on the Os Humeri to relax the muscles for if it were straight out it wd keep the long head of the Biceps on the stretch & hence the reason for the bandage beginning at the wrist.

The reason why Surgeons have been unsuccessful is because they make their counterextension on the body instead of the Scapula the extending powers act on the upper extremity altogether — In this way they can't put the shoulder joint much on the stretch, & there-

fore do but little service. For this reason the Counterextension is to be made on the Scapula & extension on the Os Humeri

While extension & Counterextension are making the Surgeon places one hand under the Axilla, it there acting as a fulcrum, & with the other rotates the arm. When he has reason to believe the head of the bone is dislodged from its natural situation he suddenly draws the upper part of the Humerus outward, & at the same instant places the fore arm by the side of the thorax, or pushes the arm down to the side thus reducing the luxation. As adhesions exist, & the Capsular ligament is contracted in its dimensions, force must be used — Besides we have the contraction of the muscles to contend against

A question here arises, that is at what period after a luxation is it proper to attempt the reduction? Some say not after 6 weeks, but this is certainly incorrect. I

have succeeded 6, 7, or 9 weeks after a luxation, & in one case 3 months after - I have read of a case of success after 6 months. - It is a point of the greatest importance to make the Counterextension at the Acromion. If you do not the Scapula will follow the arm, & by the extension you may employ as much force as to tear it together with the arm from the body without being able to reduce the luxation -

When much difficulty occurs in reducing a dislocated Os Humeri I have found it useful to bleed till the Patient faints & then it is very easy to replace the bone. This is always preferable to much violence in extension - In a case in the Hospital of 3 weeks stand. I succeeded very easily by follow.g this practice. If the patient sh.d object to this Tart: Emet: or injections of Tobacco sh.d be used wt. seldom all fail.

In some cases where the head of the bone has been out of its natural situation for

A bandage is to be passed over the elbow & fixed by a tackle. The arm being bent the assistant draws the rope for extension

6 or 7 weeks has contracted adhesions to the surround^g soft parts considerable force is necessary to tear these adhesions asunder; & it is sometimes necessary to employ straps & pulleys. A bandage is first to be passed round the thorax, thro w^h a cord may be passed & given to an assistant to keep the body steady, & also to fix the lower angle of the Scapula if possible. A strap is to be passed over the Acromion of the diseased side, & fastened on the wall on the sound side opposite the Pelvis for counterextension — & a girth over the shoulder lined with buckskin & stuffed w^h is to be fastened to a staple in the floor. For the extension place the hook of the pully in the towel already described — this towel may be lengthened if necessary. — It is necessary for some one to attend constantly to the strap at the Acromion if the patient be in a sitting position — this is an inconvenience as the band for counterextension will slip from the Acromion Scapula, & to remedy it a strap must be pas-

sed round it & held down opposite the Acromion When, by this extension, the head of the bone is moved out of the axilla, the Surgeon breaks the adhesions by moving the arm upwards & downwards, & by pressing down the elbow. When the adhesions are broken the arm is to be suddenly pushed down.

When sitting, the Patient notwithstand.g all his resolution will often fall down & thus cause the bandage to slip; in this case he sh.d be laid on a Mattrass or pillow where he can't elude the extending powers — in this position the straps are to be fastened to the wall. I have succeeded in reducing this luxation after the bone has been displaced 6 or 9 weeks. Contrary to the opinion of the English & French Surgeons I see no reason why we sh.d not attempt the reduction of this dislocation even after several months have elapsed. They fear the obliteration of the Glenoid cavity. But if in an unnatural situation the bone forms a

kind of socket for itself, there is certainly much more reason to believe that in its natural situation it will do the same thing. In two cases of Old luxations I have heard the adhesions give way with a crack while rotating the arm for the purpose of breaking them during the continuance of extension & counterextension.

Luxations of the Fore arm at the elbow.

This never takes place forward unless the Olecranon be broken off. It is generally upward & backward. The arm is semiflexed, & the patient is unable either to flex or extend the arm. – Above the Condyl of the Os Humeri you feel the hook of the Olecranon. The Coronoid process of the Ulna is lodged in the pit of the Os Humeri & naturally receives the Olecranon, for this & the Os Humeri is the principle obstacle to the reduction. –

Now & then a luxation takes place laterally, sometimes the external at others the internal

condyl of the Os Humeri. When there is a luxation laterally of the external condyl, you feel the round head of the radius & Olecranon opposite the external condyl. — If swelling & has taken place no reduction shd be attempted until the inflamn has subsided — Boyer says after 20 days don't attempt the reduction, but this is highly erroneous for I have completely succeeded after a month —

For the Counterextension an assistant grasps the arm just below the shoulder, another just above the wrist makes the extension. While these are making the Surgeon locks his fingers in the bend of the arm with his thumbs on the back part, & pushes it directly outward to free the Coronoid process from the Cavity of the Olecranon. When the Coronoid process is sufficiently dislodged, the assistant at the wrist must suddenly bend the arm to the shoulder, & the dislocation is reduced —

When the bones are displaced laterally the

same treatment is to be pursued

The arm is to be kept bent & supported in a Sling for 8 or 10 days. — If the dislocation has continued for 2 or 3 weeks it is very difficult to reduce. If complicated with a fracture of the Olecranon, it is necessary to keep the arm extended by a strong splint on its anterior part.

Luxations of the Radius at the Wrist.

— These are generally forwards, seldom backwards. — When forwards a protuberance is formed behind fm the Mole head of the Ulna. the end of the Radius is more anterior than Natural with semiflexion of the fore arm. The signs are nearly the same in a luxation backwards. — Simple extension while the Surgeon pushes the bone into its natural situation is sufficient

I have seen a case in wt the Radius was fractured near the wrist, & the ulna dis-

located fm the Humerus; in this case I reduced the Ulna as before, & with my thumbs forced down the head of the Radius wh was some distance above the external Condyle, & the Patient was well in 6 weeks

Fingers. — In general the first Phalanx passes behind the second. Simple extension with a sudden flexion of the fingers is sufficient. — This is not the case however with the thumb — I have heard of the first Phalanx being torn off in effecting a reduction — I once saw a case in wh violent force was applied to no purpose but whilst the extension was continued by a sudden twist the flexion was suddenly reduced —

Luxations of the Os Femoris.

The head of this bone is lodged in such a deep socket & so well defended by muscles, strong ligaments & that Surgeons have supposed it impossible for a luxation to take place, & that fractures of the neck of the bone have been mistaken for luxations. Boerhaave says it wd require 1000 ℔ to break the round ligament. But I believe there are 3 luxations for one fracture of this bone. One or two such cases occur every year in the P. Hospital.

It may be luxated upward & backward, downward & forward, downward & backward, forward & upward, & directly forward. The luxation upward & backward is the most frequent. — The limb is considerably shortened 1 or 2 inches — in attending to this the situation of the Pelvis shd not be overlooked, for its obliquity will influence the length of the

limb. — The bone is lodged in the Dorsum of the Ilium, the toes are turned inward & upon the least attempt to bend them out there is much pain. The Trochanter is higher up than natural being near the Crista of the ilium — The Patient is unable to move the limb. — As a rule whenever the bone passes on the fore side of the Acetabulum either above or below the toes are turned outwards, & when behind inwards, & hence it arises the head of the bone is the part that is first displaced, & the neck & Trochanter follows it in its motion — thus if the head passes backwards the posterior part of the neck of the Femoris is bended sideways & the toes inwards — When the head passes inwards, the neck & Trochanter follow — It must have its Anterior side turned laterally, & hence the toes are turned inwards. — There is some apparent motion of the Pelvis as it rolls on the sound hip joint

There is also apparent motion of the Spine But it is easy to ascertain it by fixing the Pelvis. – It has been mistaken for a fracture of the neck, but it may be distinguished by the signs wh I mentioned when treating of fractures. – In luxations you never hear the crepitus &c &c

The thigh bone may also be luxated downwards & forwards, in wh case the head of the Femur is lodged in the Foramen thyroideum. – Next to the luxation upwards & backwards this is the most frequent. Some Authors have thot that this is the only direction in wh the thigh bone cannot be luxated. – When this luxation occurs the limb is 1½ or 2 inches longer than natural, the foot is turned outward & any attempt of the Surgeon to turn it inward causes great pain the leg is somewhat flexed on the thigh. fulness in the groin caused by the head of the bone

& in thin people it can be plainly felt

The thigh bone may also be luxated upwards & forwards, & directly forwards — this last is extremely rare, when it does occur the limb is not shortened. — When the luxation is upwards & forward the limb is a little shortened & the foot is turned outward

When the luxation is downward & backward the foot is turned inward, & the limb is of the same length —

Particular attention shd be paid to the species of luxation — As a general rule the extension shd be made on a line with the Os Femoris —

The luxation upward & backward is the most frequent. — I have seen 9 luxations of this kind, & 2 downwards & backwards. The head of the bone is lodged in the Dorsum of the Ilium &c

<u>Treatment</u>. — Place the Patient on a table on his side; & in order to give the

greatest possible relaxation to the Muscles; the thigh must be bent on the Pelvis & the leg on the thigh — Extension & Counter-extension are to be made in the direction of the limb. — A firm strap is to be passed between the Perineum & thigh of the affected side & carried above the head for the Counter-extension previously laying a compress of flannel to prevent excoriation — the extremity of the strap if necessary may be fixed to a hook in the wall. — A couple of towels are next to be fixed just above the knee one on each side with a circular roller, as in luxations of the humerus; but if the Patient is so fat that the bandages slip off, it ought be fastened just below the knee. — Then the assistants who make the extension pull by. If a sufficient number cannot pull by towels, you may put ropes thro' them. — If still greater force be requisite, hook the pullies to the towels. By the pullies as much force can be ex-

ented as can ever be necessary. — The Patient lying on his side near the edge of the table while the extension & counterextension are making, the Surgeon takes hold of the leg at the ankle & bends it on the thigh — he then rotates the bones till he has dislodged the head of the femur & raise it over the Acetabulum, & it then enters the Acetabulum with a report almost always perceptible. The Pelvis shd be fixed to the table by a bandage over it passing thro' holes in the table & fastened to the floor. — If this fail v.g. ad deliquium animi shd be tried

This mode of treatmt admits of general application in the different luxations of the femur, with this addition when it is forwards & downwards, — besides the extension in the direction of the thigh an additional extension is to be made at right angles with the first. — With this view place a towel between the Perineum & thigh of the affected

side, & this to be put over an assistants shoulder who shd stand upon the table or bed of the Patient. He then puts his knee or foot upon the crista of the Ilium makes the extension. If this is not sufficient use pullies at the same time rotating the limb. The Patient must always be laid on the edge of the table, for the injured limb being over the edge is more easily come at & you can give the rotatory motion in a better manner.

Luxations of the Tibia

seldom happen; when it does occur, it is generally luxated laterally, & most commonly externally. It is caused by falls on the foot when the leg is at the same time in a state of abduction. The external condyl is lodged in the semilunar cavity of the Tibia, & receives the internal condyl in its nat-

ural state. — It may be known by the pain, by feeling the pully like surface of the Patella; the internal condyl is very perceptible & prominent; the leg is bent outwards & forms an angle with the thigh. —

It is reduced by extension & counterextension & at the same time pushing the Tibia inwards. — The ligaments are so much torn that it is easily reduced, but they are so torn & lacerated that it is difficult to keep them in their situation. — A roller shd be applied beginning at the ankle & continued up to the hip — The long splint of Dessault shd then be applied & moderate extension made over the thigh & leg by means of the splints

The joint shd be kept free from motion for at least 3 months that the ruptured ligaments &c may be perfectly united

Patella. –

This luxation is generally laterally, on one or the other side of the Os Femoris: & it is pushed either on the external or internal Condyl of the Femur. – The first is the most common the Patient is unable to extend or flex the leg, & the Patella is so placed at the external side of the knee that the external side has become the posterior, the Anterior has become the external, the internal the Anterior, & the posterior the internal. – A vacancy is felt at the joint of the Patella, & a projection on the external side. – The leg shd be kept extended & the thigh bent on the Pelvis to relax the muscles so as to put the Patella in its natural situation, wh is then easily done by pushing against the Posterior side of the Patella. – After the reduction the joint shd be kept fm all motion for a week by keeping the patient in bed; & if necess-

any by applying a splint to keep the leg extended until all inflam^y symptoms disappear —

Ankle Joint

These luxations are backwards, forwards, & laterally. — I have already mentioned when treating of Fractures of the Fibula, that when this happened laterally the Fibula was fractured at about 1/3 of its length f^m the lower end, & likewise the treatm^t of^t is necessary. — When the luxation is forwards the bones of the leg are placed on the instep, & vice versa when backwards. — Extension sh^d be made by the foot & heel, & Counter-extension f^m just above the ankle; & while this is doing the leg sh^d be pushed either forwards or backwards according to the nature of the luxat^n — Great care sh^d be taken that the joint be not used before

the injured parts are perfectly restored, as it may bring on the worst consequences It ought not be exercised for 10 or 12 weeks.

Case of a Lady who received a luxation of the ankle joint by going down Stairs - the bones of the leg were pushed forward and rested on the instep - After the reduction, she was unable to walk for 12 Months.

For further information on Dislocations & Fractures, see Boyer & Desault

Sprains.—

Sprains occur most frequently at the wrists or Ankle joints.— A sprain is a forcible extension of either side of the capsular ligament, it being partially ruptured by the head of the bone.— It is almost a luxation!— Sometimes the Bicepsels are ruptured, & then great Swelling & Ecchymosis takes place fm the effusion of blood in the Cellular membrane — always attended with pain. — It is of importance to distinguish it fm a luxation, for treating it as a luxation by extension &c wd aggravate the symptoms. It may be known fm luxation by the joint preserving its motion &c

Treatment.— If called immediately immerse the part in cold water for 60 or 90 minutes, or pumping cold water on the parts.— The action of cold water is not ea-

sily explained, but I suppose that the vessels are small, & do not at first effuse all the blood; the cold stimulates the vessels to contract wh stopping the effusion permits the parts to come in contact again —

After cold has been applied, the limb shd be bound up in soft linen wet with vinegar or spirits over wh a roller shd be passed, not too tight, above the sprain. The wrist shd be kept free fm motion by splints along the fore arm —

But the surgeon is usually not called till sometime after the injury — hence he generally finds the part swelled & — Rest shd be enjoined & all the remedies for inflamn used, wh may be continued for 10 or 14 days — Vf. leeches & blisters to the part. If great pain occurs an Opiate may be given —

When the inflamn & pain goes off the Patient & his friends think that nothing

but weakness remains; but the liga-
ment is ruptured; the patient walks
about, inflammat^n returns, & con-
finement is once more the consequence.
In one case I actually saw suppuration
supervene in consequence of it; Caries of
the bone, hectic & death, as the patient
w^d not submit to amputation.

Injuries of the Scalp.

When contusions of the Scalp are received from blows by an obtuse body the part feels soft & pappy, the surround^g edges are hard, & the accident appears to an inexperienced Surgeon as if the bones were fractured; & not only fractured, but as if the fractured part were actually driven into the brain. A young Surgeon w^d be apt to make an incision thro' the contused parts into the bone; this however sh^d never be done unless symptoms of compressed brain existed, as the patient w^d suffer the pain of an Operation, probably exfoliation of bone opposite to the contused part, a longer confinement to bed & a tedious suppurating sore — For these reasons then an incision sh^d never be made in the Scalp unless symptoms of compressed brain exist. — I endeavour to avoid inflam^n of

the brain by the application of rags wet with cold water, or vinegar, low diet & antiphlogistic remedies. — The applicat^n of cold in various forms is one of the best methods of removing & preventing inflam^n & likewise of causing absorpt^n of the effused blood. If this shd not cause an absorpt^n of the effused blood, a puncture may be made with a lancet, the blood will escape, & the puncture shd be closed wh will readily heal. If it be opened by a large incision all the bad consequences above mentioned may ensue.

The Scalp is liable to all the different wounds. — In incised wounds all extraneous matters as blood, dirt, hair &c must be removed, & then draw the divided edges together, & retain them by ad: plaister.

In Contused Wounds bread & milk poultices must be applied until suppuration comes on & granulations begin to

form, then approximate the edges & apply ad: plaister.

But in addition to these we sometimes find the Scalp much torn up fm the parts it covered. — I have seen it torn fm the forehead to the Occiput in the direction of the Sagittal Suture. The Scalp is sometimes torn fm the Parietal bones, falls down & covers the ears on the side of the face. — It was formerly advised by the older Physicians to cut away the whole portion of the Scalp so torn as they thot it wd produce exfoliation of bone — their intention was also to prevent a confinemt of matter. This practice is very absurd; you are to clean the scalp of dust hair & all extraneous matters by means of a Sponge & warm water, replace it in its proper situation & keep it so by sutures or ad: plaister; the last is preferable. — When sutures are used the edges shd not be close in contact as this will produce inflamn

delirium & other alarm.g symptoms I have known the circulation to be interrupted, & sloughing produced. — The sutures sh.d be approximated ¼ of an inch, the knots sh.d not be firmly tied, they sh.d be bow or slip knots for if tension sh.d occur it w.d then be easy to loose them. —

If an abscess sh.d occur open it in the usual way. — If an exfoliation of bone sh.d take place you sh.d watch & remove the piece of bone as soon as it is detached — Many of you might perhaps think of waiting 2 or 3 days that it might become more loose, & after that length of time not finding it more loose might still wait several days longer: but instead of its becoming loose it becomes more difficult to remove by granulations shooting out & ossification taking place; therefore as soon as you find the bone is seperated you sh.d extract it. If the opening be too small for its escape it sh.d be dilated, & if-

it is still difficult it shd be forcibly extracted.

When inflamn occurs after wounds particularly the punctured it spreads like Erysipelas all over the face arms &c Fever & at times delirium ensue. When it occurs fm a punctured wound dilatation will immediately subdue the Symptoms. If this fails the Antiphlogistic plan shd be pursued; & if this does not succeed, a blister over the inflamed part of the scalp. When the Aponeurotic expansion is affected I have known it to slough off before it was cured — It's sometimes difficult to ascertain whether the Delirium arises fm inflamn within or without the Cranium, or whether fm disease exterior to the bone, or fm suppuratn inside. This may be determined by observing the state of the exterior disease, for if large it is quite sufficient to produce delirium, atn consideration will prevent the

Surgeon for laying bare or perforating the bone.

The Second disease for contusions or contused wounds of the Scalp is formidable on acct of the extreme pain & distress wch it occasions & for its very long continuance. The part receiving the injury is affected with very great pain. A case of this kind came under my care in a lady who received a blow from a window falling on her head. Every thing had proved ineffectual. On shaving her head I found no swelling & not the least appearance of disease. I advised an incision wch she consented to. I made a crucial incision in the painful part wch was no sooner done than she became perfectly easy. Nothing is so effectual. A lady who fell from a gig received a blow on her head wch occasioned a constant distressing pain. Bark, Opium, Arsenic, Blisters, low diet, Mercury & purging were tried without effect. I

performed the crucial incision wh gave her ease for a month & her pains then returned I kept the wound open by applying lint between the edges, & by applying Cantharides — I advised her to have the portion of Scalp where she felt the pain destroyed by Caustic, wh she consented to, & all without avail — Thus I have performed the incision without benefit. This Lady was cured by removing to the Country by my advice after suffering immense pain for a great length of time

This operation was performed on another Lady without the least benefit after every thing had been tried without effect, I advised her to go to the country — she did so — she was soon siezed with an oppression at the pit of the Stomach, & then puked up a large quantity of a colourless fluid, the pain immediately diminished & after a short time she perfectly recovered —

A man who fell fm a Scaffold &

received a contused wound of the scalp was affected with this pain to such a degree that he could bear no one to walk across the floor I made with a scalpel a crucal incision 1½ inches long wh. at that moment eased him, but in a few moments returned on the opposite part of the head. After waiting 2 days & finding the pain continue, I advised an incision there also wh. he consenting to was perfectly cured — An incision then thro' the painful part of the scalp is the only remedy, & if that fails a journey to the country.

I have never known this to terminate fatally, it always wears away after a length of time. — A sea voyage cured it while at sea, but it returned on landing.

Compressed Brain is the next accident produced by contused wounds.

The symptoms are stupor drowsiness

loss of speech, loss of the power of voluntary motion, sickness at stomach, vomiting & hemorrhage from the ears & nose. It may arise from 2 causes.—

1 From a fracture of the Cranium, & a piece of bone depressed below its natural level, pressing on the Dura Mater & Brain.

2d It may be occasioned by an effusion of blood from the ruptured vessels in the violence done to the head, with or without a fracture. It then occurs between the Cranium & Dura Mater, or between the Dura & Pia Maters, or the substance or ventricles of the brain.—

When the affection occurs from effusions of blood from ruptured vessels these symptoms seldom directly occur, not till after the expiration of some time. These two causes are often combined. A boy received a wound in the forehead on examining

the wound I found the bone fractured & actually driven in pressing upon the Dura Mater. — He was able to sit in a chair and tell us he received the fracture from a stone being thrown across the street. — Directly after he had finished this relation he fell down & was seized with the symptoms of compressed brain just related, as being senseless, stertorous breathing, loss of voluntary motion. Ten minutes had elapsed from the time he had received the injury till these symptoms came on. — Now it could not have arisen from the depression of bone, it must have been caused by the effusion of blood from the vessels which were ruptured at the same time which going on slowly afforded this interval. —

The Cranium is sometimes fractured & the bone depressed while no symptoms of compressed brain exist. — I once saw the frontal bone so pressed in that it was easy to put the finger in the depression, & yet these symptoms

were absent – It is difficult to be accounted for & can only be accounted for in one way, that is by supposing the bone to be beat in opposite the longitudinal sinus for had it pressed on the Dura Mater they must have been produced –

The next species of injury attending wounds or contusions of the Scalp, is when there is

Inflamn of the Brain or its membranes. It may be distinguished from compression by never coming on directly after the injury – 8 or 10 days elapse before the symptoms appear, & in one case they did not appear until the 6th week –

The symptoms are restlessness, want of sleep, a frequent hard pulse, rigors, delirium, coma, & convulsions – It may be caused by simple contusions of the Scalp, or when there is a simple fracture, or a fracture accompanied with depression of bone. – When inflamn is about to

come on fm contusions of the Scalp, the part at bas received the contusion becomes tumified soft flappy, as if there was a fluid beneath, & when an incision is made down to the bone so as to lay it bare, the denuded cranium will be found changed to a white colour - However well the appearance of contused wounds of the scalp may be, it ceases as soon as inflam^n occurs, the granulations become flabby, & instead of healthy pus discharges a thin serous fluid, & the pericranium seperates fm the edges of the wound. — In contusions of the scalp, however slight they may be, warn the Patient against inflam^n within the Cranium, & prevent him fm exercise, at the same time using Antiphlogistic remedies. - If he complains of pain, bleed, purge, & apply a blister to the injured side. If this don't succeed, rigors & convulsions will ensue. To prevent this it becomes necessary to perforate the

bone with a trephine. In doing this you will find the Dura Mater & the pus on the surface or if it be exterior is a fortunate circumstance, but at times it is interior between the Pia Mater & or causes death.

When contusions produce suppurat^n between the Dura & Pia Maters the blow is felt thro' the bone by these membranes, irritating them to inflam^n & suppurat^n

When for the symptoms of compressed brain, you think there is matter on the surface of the brain, perforation of the bone becomes necessary for raising up the depressed portion of it, letting out the effused blood & if there be inflam^n for suffering the pus to escape, as it may otherwise make its way into the brain.

Contusions sometimes take place where there is no mark to shew the injured spot. In this case it has been advised to perforate the bone by guess. I shd much rather depend on other means such as ice cloths

or clothes wrung out of cold water. Bleed from the arm, keeping the Patient perfectly still & quiet, thus endeavouring to abate the hemorrhage from the ruptured vessels.

Instruments necessary. A strong Scalpel two Trephines, an Elevator, a Tooth Pick, & Mr Hey's saw is very convenient

First shave the hair from the head to be able to make the incision, & for this purpose a strong Scalpel is first wanted. With that portion of it which projects beyond the handle you are to scrape the Pericranium. A raspatory was formerly used, but a strong Scalpel with the back projecting thro' the handle is preferable. A Perforator was formerly used to fix the Centre pin of the Trephine but if this last instrument is properly made the perforator is useless. The next instrument is a Trephine with a circular saw having the Central pin moveable & the saw being

a portion of a Cylinder. The Stem is made hollow in wh the Centre pin prevails & may be drawn up to any height, or made to project beyond the teeth of the saw. Two Trephines exactly of the same size should be at hand that one may be cleaning while the other is using. – When the groove is formed you may remove your centre pin, & retract it as soon as it gets a little deep, for if you were to leave it projected you wd perforate the bone & probably the dura mater. – The Elevator is the next thing wanted wh is a simple lever. A pair of forceps to pull out pieces of bone wh some Surgeons use is of no service. The Lenticular wh is employed to take off sharp edges of bone is useless for the elevator will answer as well. – A tooth pick is also necessary to ascertain the depth of the saw. –

Operation. First expose the bone to ascertain the nature of the Fracture. At

times there is a wound but in other cases there is none, or but a very small one in it an incision is to be made thro' the Scalp down to the bone.

When a fracture exists I need not tell you that great caution is necessary in making this incision, for if much force be used the knife may go down thro' the fragmts to the Dura Mater. — After you have denuded the bone, the pin of the Trephine is to be projected beyond the saw & secured in that situation — It shd always be placed on a solid piece of bone never on a depressed fragmt but as near it as you safely can. — As soon as you have made a groove deep enough to confine the saw in one place retract the pin. You must often examine with the tooth pick the groove made by the saw so that you may tell if the saw has got thro' the bone in any point. Without this precaution, there is always danger of puncturing the Dura Mater. You

shd never saw thro' the internal table of the skull but just so as to get at it, for it yeilds easily to the Elevator. the pieces of bone shd be removed by the elevator, also any portion of skull wch might be loose. the skull must then be raised to its natural level & the effused blood will gain admittance

Sometimes the effused blood does not exist between the Dura Mater & skull but between the Dura & Pia Maters, in wch case a perforatn is to be made with a lancet thro' the Dura Mater. this is highly dangerous, all the cases wch I have seen proved fatal by inflamn & suppuration. We have known recoveries frm punctures of the Dura Mater by accident, & it appears strange that art shd be unsuccessful. — But death in this case does not arise frm a puncture of the Dura Mater, but frm the blood being effused between the Dura & Pia Maters, wch does not all flow out at the puncture, but part being coagulated

& sticking to the Pia Mater causes inflam^n & suppurat^n — In the Puncture of the Dura Mater Gu^n Specula of bone & there is no effusion —

We can tell when blood is effused under the Dura Mater by its under part being of a darker colour than natural, by its feeling very tense instead of soft & flabby, by its being a convex instead of a plane surface, & by the pulsation of its arteries, & its alternate rising & falling being absent — It rises on expiration & falls during inspiration

It is often proper to delay the operation for cold applications & V.S. have produced absorption

Mr Heys saw to remove depressed portions of bone, & saw them out, is a very convenient instrument, & may answer for a Trephine

The Symptoms are a wild look, watchfulness hard pulse, fever, inclination to vomit & a debility of the understand^g — Cold applications shd be used they often succeed, if not, a bli

ter over the part. & if that fail, Mercury with a view to salivate — It was used in the Hospital by Dr. Rush in 95 or 96

Dressing the Wound. — It is very customary to apply dry lint over the Dura Mater & Pericranium; it is certainly very light but it has one great inconvenience it is that the blood Coagulating along with the lint sticks close to the wound, & when fm the Symptoms wh take place it becomes necessary to examine the Dura Mater we are unable to remove the lint without producing very great pain & irritation. — A soft bread & milk poultice sits easily, & is easily removed. It was customary to leave the edges of the divided scalp open but lately the edges have been drawn together by sutures, as when the bone is injured much suffering is prevented & the cure is sooner effected I have often treated it in this manner after the operation of Trepanning & have been pleased with

the result. When the Scalp is open there is an exfoliation of the denuded Cranium, granulations will arise, & there must cicatrize wh. renders it a tedious process. There are inconveniences however in drawing the edges close, for its impossible to see the dura Mater.

When after the Operat.n of Trepanning & the elevation of all the depressed portions of bone I find the Dura Mater sound, I draw the edges of the divided Scalp close together either by Sutures or what is still better ad. plaister, & tying the Sutures if they are used with bow or flip knots.

When blood exists under the Dura Mater, or the evacuation of blood continues, I never draw the edges of the Scalp close over the perforated bone, but leave a wide opening for the evacuation of matter.

After the operation it is necessary to pay particular attention to the Patient as inflam.n of the brain itself sometimes occur. He sh.d be kept to a low diet avoiding animal food & every

thing spirituous, be confined to a dark chamber & perfectly at rest. - Th^e fever come on, most copious V.S. th^e be used - Nothing requires the lancet to be pushed to so great an extent. I have bled 4 or 5 times in one day. - When the effusion is between the Dura & Pia Maters this is particularly necessary - A boy who had a fracture & depression of bone was completely recovered by the operation - As soon as the bone was elevated he was restored to his perfect senses from a state of insensibility, & continued so for 2 or 3 months. - After this time febrile symptoms appeared, pain, a tense hard pulse, with irritation & delirium also. The Dura Mater was elevated into a Conical form at the bottom of the perforation, & the upper & middle surface of the Dura Mater was on a level with the external table of the Skull. It appears something like the effects of a blister. By these symptoms I supposed that inflam^n of the brain had taken place, & by the remedies just mentioned

the swelling was reduced to a plane & the boy recovered. — I mention this case because some Surgeons wd have made a perforation to let out the effused fluid —

Concussion

I mentioned that violence were sometimes done to the head & the functions disordered when there was no mark to guide us in the application of the Trephine, there are called Concussions. Bleeding the Antiphlogistic plan, & a blister over the part shd be used until a copious suppuration is produced on the external part of the Scalp. Bell advises in Concussions of the Brain the use of Stimulating applications this is a pernicious practice — the use of wine Vol: Alk: & Opium as he recommends must increase the effusion

There are several places where the Ancients deemed it improper to apply the Trephine as over the Sutures, Temporal & Occipital

bones, & Frontal Sinuses. But whenever it is necessary there is no reason for paying any regard to the place. I have operated on all parts. — Their reasons for not applying the Trephine over the Sutures were that the Dura Mater adhered more firmly to the bone at that place, & there were more vessels passing to & from the bone & they feared inflam^n. There was also a large sinus & they were afraid of opening large Vessels. — I have operated over the longitudinal sinus, the hemorrhage was easily stopt by a Dossil of lint. —

They avoided Operating on the Temporal bone because the Temporal muscle lay there & they expected if that was wounded Locked jaw w^d ensue. — I have laid bare the Squamous portion of the Temporal muscle & the Patient was unable to open his mouth, but yet this was very different from the locked jaw; & it went off in a few days. — It was merely the inflamed state of the muscle w^h prevented its clos-

gation, & it went off without any application

They wd not Operate on the Occipu=
tal bone because it was uneven & for the
same reasons that they were afraid of the lon=
gitudinal Sinus —

Diseases of the Eyes

These may be divided into those of the Eyelids – Of the Tunica Adnata, & of the substance of the eye

When the Eyelids are inflamed they are of a Scarlet colour, the cellular membrane is loaded with extravasated Serum so as to close the lids, little pain occurs. It generally comes on suddenly in the night.

Remedies If any fever exists bleed & the arm will be necessary. In general low diet & a Merc. Purge will remove it. Brandy & Camphorated Spirit th. be applied.

If inflam.n of the Tunica adnata & Sebaceous glands take place, small ulcerations discharge a viscid purulent matter wh. glues the eyelids together in the morning. I think this disease consists in inflam.n of the very small

glands wh are situated at the roots of the hair forming the Cilia or Eyelashes. —
Spermaceti Oil, Ung: Citrin. shd be inserted between the eyelids every night & morning.
Tar Ointmt between the eyelids at night
The tar Ointmt I have found particularly efficacious in 3 Inflammat. of the Conjunctiva & Cornea. These membranes naturally white become red in consequence of inflamn forcing red blood into their vessels — the eye waters very much, light is offensive to it, the pain is of the hot & burning kind —

Sometimes the inflamn exists in the Angle, a spot near the edge of the Cornea, especially in children. The child closes its eyes & buries its body to screen them fm the light — or covers it with its hand. The inflamn often extends over the Cornea inducing redness & opacity wh unless soon cured leaves a film

The part between the Cornea & internal Canthus is most frequently affected

The Causes are

1 the disease called Trichiasis

2d External violence

3d Acrid substances getting in as Lime, Smoke, Acids &c

4 Too much exercise of the eye on small objects

5 Cold

6 Frequent intoxication

7 Small Pox Measles &c

8 Excess of light

9 I have known inflamn of the eyes induced in 2 instances by washing them with urine One case ended in Opacity of the Cornea & loss of sight. — It sometimes comes on without any evident exciting cause —

Inflamn of the Globe of the Eye.

This takes place either anterior or Posterior to the Crystalline lens

Symptoms. — Shooting pain, great sen-

sibility to light. – When the inflam^n is in the anterior chamber, it often ends in suppuration, the pus may in some instances be absorbed, at other times an incision is necessary to let it out. – When the inflam^n is behind the crystalline lens, the pain is intolerable, & all the symptoms are more violent, there is often a total suppression of the powers of vision, delirium follows & sometimes death. – To prevent the continuance of the inflam^n remove the exciting causes & extraneous substances – Sand or pieces of Iron may be wiped off with a rag or washed out with injections of milk & water. If these methods fail, invert the eyelid, then you may very generally find & remove the extraneous body. –

Trichiasis or the Cilia turning inward & irritating the globe of the eye is of two kinds

1 From the Cilia growing in a wrong direction

2^d From Contraction of the Tunica Conjunctiva at the Tarsus – In this last case it is proper to di

vide the Contracted Conjunctiva. —

In the first case Lunar Caustic has been recommended, but this does not succeed. It is very difficult to cure. I think I sh^d be tempted in a very obstinate case of this kind to dissect out that part f^m w^h the Celia originate & grow

The Remedies to remove inflam^n of the eyes are 1 B'letting, this is the principle remedy, Is to be regulated by the violence of the inflam^n If it still continues after you have drawn as much blood f^m the arm as you judge the Constitution of the Patient will bear, you may notwithstand^g use local B of with advantage — Cups to the temples, leeches 3 or 6 of them — Dividing the tinged vessels of the adnata with the shoulder of a lancet or by raising them up with a hook & dividing them with sharp Scissors —

Purges particularly the Mercurial are very useful; also low diet. — The mildest appli=

cation to the eye during inflam^n as a bread & milk poultice not oppressive by its weight has done good – Also a piece of the Crumb of bread sewed up in a piece of gauze & dipt in rose water – An infusion of the Pith of Sassafras is an excellent application. – When inflam^n is a little moderated a good Collyrium is the follow^g –

℞ Acet Plumbi ——— grs V
Sulphate of Zinc ——— grs iij
Tinct: Opii ——— ℥ss
Acetic Acid ——— ℥ij
Aq: Rosa ——— ℥ viij

This Collyrium does harm if used in the height of inflam^n Blisters sh^d be employed when all these remedies fail, a Salivat^n sh^d be had recourse to – Even when Matter is formed in the Anterior Chamber of the Eye, the above remedies with the Strictest Antiphlogistic treatm^t – has caused it to be absorbed. If they fail in doing this, the abscess is likely

to make an opening for itself by ulcerat^n anteriorly, it then becomes necessary to open it. This is done exactly in the same way as in extraction for a Cataract. — In inflam^n of the eyes confine the Patient in a dark chamber, restrict him to a vegetable diet, & by no means permit him to use fermented or distilled liquors —

To prevent a recurrence of the inflam^n issues in the arms or a seton in the back of the neck is very useful

Unguis — A thickening of the Conjunctiva at a particular part shd be dissected off, or it produces Opacity & partial or total Opacity of the Cornea f^m a continuance of the inflam^n

If any part of the Cornea remains transparent, form an Artificial pupil directly opposite to the transparency, this has prevented total Blindness —

Sometimes Tar water is an useful applicat^n

in inflam^n of the eyes; in one case it cured after the patient had lost 160 ℥ of blood, had been purged almost every day, had his eyes frequently scarified, & had undergone a Salivation without relief. — I do not now speak fr^m experience but I think Tar water w^d be an improper application when the inflam^n is very active, or when fever exists

Fistula Lacrymalis

A perfect knowledge of the Anatomy of the eye & its appendages is here necessary. The tears are secreted by a gland in the eye w^h are absorbed by the 2 ducts called Puncta Lacrymalia that open into the Lacrymal sac & nose. — The Ductus ad nasum thro' w^h the tears flow out of the Lacrymal Sac into the nose is liable to obstruction & stricture — When this is the case the Puncta Lacrymalis continue to convey tears into the sac, w^h being preternaturally distended forming a swelling in

the inner Canthus of the eye. Pressure causes the tears to flow out of the sac over the eye & in the early stage into the nose. — If this pressure be increased, a thick mucus comes out. At this time there is no pain & the eyelids are glued together. — A mild Ointment between them shd be used & prevent the accumulation of tears in the sac by pressing them out from time to time. — When inflamn is excited by in the sac either by Cold or in any other way fever comes on & the parts are tender & painful, press on it now & then to keep it empty. If the inflamn be very violent remove it by V.S. — If suppuratn takes place open the sac with a lancet. In some cases we are not called till there is an opening thro' the sac, discharging the contents of the tumour, pus or something resembling mucus over the eye. here dilate the opening. — After the sac is dilated endeavour to introduce a probe into the Nasal duct. The bougie or probe shd remain in un-

til it passes in very freely – If it is practicable it may be sufficiently dilated for the tears to pass thro' by pieces of bougie. In some cases it is so impervious that nothing can pass in wh. arises from the passage being stopt by a depression of the Os Unguis. When there is an opening made, you may pass a probe from the Ductus ad Nasum towards the nose but the structure will prevent its entering. When there is no opening one is to be made by an incision beginning below the junction of the Palpebra to avoid the orbicularis Palpebrarum Muscle & then you are sure to cut down into the Lacrymal sac. A silver pin of the size of a probe with the head like that of a common iron nail wh. may be covered with Court Plaister shd be kept in the duct for a considerable space of time to prevent its becoming again impervious. This pin is recommended by Mr Ware – On withdrawing it the wound in the Sac readily heals. In ma

ting an incision into the sac, commence a little below the Tendon of the Orbicularis Muscle, & continue thro' the Centre of the tumour. If upon opening the Sac you find the ductus ad nasum wholly impervious, or that the obstruction is so considerable that you can't pass any thing thro', the bone enlarging & shutting up the Cavity, it then becomes necessary to make an Artificial communicat^n from the Sac to the nose by perforating the Os Unguis — this opening is best performed by introducing a piece of horn high enough up the nostrils to be opposite the part you wish to perforate. — The perforat^n is to be made by an instrument exactly like the Common punch invented by Mr Hunter. This instrument, if as sharp as it sh^d be completely removes a Circular piece of the Os Unguis. In applying it take care to put its edge completely within the posterior part of the nasal process of the Superior Maxillary

bone, if you apply it on this process you may work for an hour or two without getting it into the nose Confine the instrument to the Os Unguis. Mr Potts curved Trochar is now laid aside as it breaks the bone into several pieces, & not removing a circular portion the bones are often united again leaving no open.g for the sac to the cavity of the nose. Another objection is that the wound is obliged to be kept open.

Mbell a French writer recommends small probes & syringes to wash out the sac, these are not at all used. Sometimes when upon opening the sac you will find a fungous or carious bone, the fungus is to be destroyed by the common remedies, & the carious bones if there be any when loosened are to be extracted.

Cataract

By this term is meant an Opacity of the Crystalline lens or its Capsule. It shews itself in round spots & behind the Pupil of a white, grey, or dark colour. When it is coming on the patient has the sensation of a mist before his eyes & of threads hanging over them. – In the end it often produces insensibility of the pupil to light & total blindness. Sometimes (I think especially in women) it comes on with pain & a sensation of weight over the eyes. – Only one eye is commonly affected in the first instance, but in time the other generally becomes affected – Persons advanced in life are most liable to become affected by it. Occasionally however it attacks persons of all ages. I have known children to be born with it. – When the disease arises fm Mechanical injury, it has been removed by V.S. Purging, low diet & blisters. But when fm an internal

cause I believe nothing but an Operation will remove it — Mercury, Cicuta, Issues &c have been tried. — I have known it in some instances absorbed by the powers of Nature & thus removed without any assistance

The operations proposed for the Restoration of vision are two — One consists in pushing the Opaque Crystalline lens from its natural situation to the bottom of the eye & is called Couching — The other in making an incision into the Cornea thro' wh the Opaque Crystalline lens is extracted called Extraction Extraction is preferable to Couching for many reasons —

1 Its not so painful — Here the case of one eye Couched the other extracted was related —

2d It is a much more complete Operation, it never being necessary to repeat it When the Cataract is depressed, the lens is very apt to rise again & resume its former situation requiring repetitions of the Operation. — In some

instances the vitreous humour is so fluid as to allow the lens to be moved about in it after being depressed, but this has never happened in any case that I have seen

3 When the lens is fluid it is impossible to depress it with the Couching needle. But it has been said that upon rupturing its capsule it will mix with the vitreous humour & be absorbed. In some cases this may happen. I have sometimes found the lens only partially fluid, & the fluid might be absorbed but the solid wd remain in situ obstructing vision as before

4 When the Capsule as well as the lens is opake that it can't be depressed with a needle. When the lens is extracted you may afterwards extract the Capsule with a forceps

5 When adhesions exist between the Capsule & the lens & iris there is great risk of tearing it away from its attachmt & carrying it along with the iris to the bottom of the

eye thus producing blindness if the operation of couching be performed. It appears then that couching is not applicable to every case but extraction is

The principal objections that have been urged against extraction are

1 That forcing the Cataract thro' the Pupil it produces in that opening raggedness & inequality. This rarely happens, & when it does it does not impede vision

2d It is said Cicatrices fm a Section of the Cornea will be so large as to induce considerable Opacity of the Cornea. If the incision be made with a sharp knife & at one stroke (as it always shd be) the Opacity remaind will be so small that a stranger can't tell wh eye was operated upon, Besides if any opacity shd remain it wd be so near the Sclerotica that it wd not be likely to impede vision

3d It is said there is great danger in ex=

tracting if the Vitreous humour be evacuated. This happens fr the great pressure on the eye, & will not often occur to a person qualified to perform the operation. But if a portion of it be evacuated, no bad consequence results. — In one case where 1/3 of the vitreous humour was evacuated recovery was more rapid & vision as perfect as ever.

4th It is objected to the operation of extraction that in performing the section of the Cornea, a portion of the Iris is also liable to be cut. This cannot always be avoided. — If any part of the Iris gets entangled on the knife, it can be seen & is easily disentangled by rubbing the Cornea with the end of the finger

Before Patients will submit to the operation you will generally find it necessary to predict what the probable event will be —

If the eye be perfectly healthy & not subject to inflamn — if it be sensible to the light, the pupil contracting & dilating accordg to the

degree of light; if the Patient can readily distinguish day from night. if his general health be good, & eyelids free from inflam^n & Oedema; you may venture to give a favourable opinion of the event of the case. — But if on the Contrary the Patient has pains in the head; is subject to inflam^n of his eyes; if the eyelids be Oedematous; if the Patients general health be bad; if he be troubled with cough, or very subject to vomiting or sneezing, the convulsive motion of Coughing vomiting or sneezing may after the Operation is performed force out the humours of the eye, or rupture the B'vessels of the Iris. — A case occurred in u^r this actually happened; one of the vessels of the iris was ruptured by a fit of Coughing, & a small drop of blood extravasated in the Iris, this irritated the eye & caused it to suppurate thus rendering the Operation abortive. — I have found pressure on the upper lip to prevent sneezing

Previous to proceeding to the Operation if

the patient has pains in the head it shd be relieved, this I have done by purges - 2 doses of salts a week for some time. - If there be inflamn remove it first by the usual remedies If the eyelids be Oedematous blisters to the back of the neck are recommended. -

The Pupil being immoveable & of the same size in every degree of light has been thot a sufficient reason for not performing the Operation at all; but this shd not prevent it in every instance, for the retina is sometimes in a sound state. And on the other hand the pupil sometimes Contracts & dilates when the Retina is unsound - Free motion of the pupil is not a certain proof that the Retina is sound. -

The best time for performing the Operation is in the temperate seasons of Spring & fall. In very hot weather, confinement to bed will be very irksome to a Patient, & in winter he will be very liable to take Cold & will

in all probability injure the eye in some way or other, by inflaming it, & by the cough that attends.

In order to render the inflam^n subsequent to performing the Operation as mild as possible, confine ye patient to low diet for some days previous to performing it; take away some blood f^m the arm & the day before prescribe a Cathartic. When the Pupil is insensible to the different degrees of light & the Retina sound, it arises f^m adherions of the Posterior surface of the Iris to the anterior surface of the Capsule of the Crystalline lens.

Instruments necessary in the Operation of Extraction.

1st A knife. One of its edges sh^d be sharp thro' its whole extent, the other to the 1/8 of an inch f^m its point

2^d A Needle, on the handle of w^h is a scoop, & it sh^d be a little curved at its point

3^d A small Hook

4th A small pair of Forceps. These shd touch by broad surfaces, for if they touch by points only, they wd only tear a small bit of the Capsule of the Crystalline lens. If the Cataract be of firm consistence, or shd fall down behind the pupil to the bottom of the eye then they must be passed thro' the Pupil in the Crystalline lens to extract it —

5 A sharp fine pointed pair of Scissors

The Knife recommended by Baron Wanzel shd be used. It shd be very sharp — To about an inch on its back it shd also be sharp that the instrument maker may give the knife a very perfect & sharp point. — Its thickness shd gradually increase from the point to the handle, that it may, by acting as a wedge at the time of making the incision prevent the escape of the Aqueous humour. The widest part of the blade shd be equal to half the Diameter of the Cornea

Needle. — This is to rupture the Cap-

side of the lens. The Point shd be a little bent. The Scoop on its handle is for the purpose of removing any detached portions of the Opaque Capsule &c after the lens is extracted —

Hook. This is necessary when the lens happen to fall deep in the eye after incision in the Cornea is made —

Small Forceps to remove the Capsule of the Crystalline lens when Opaque —

Scissors These shd be very sharp & fine pointed. It is necessary to have them in case the section is not complete, as by them you may easily make it so —

If the incision shd require enlarging it shd be done towards the external Canthus of the Eye that if any Cicatrix remain it may not be before the Pupil —

Previous to proceeding to the Operation it is proper to put a bandage round the Patients head with two compresses hanging

to it; one over each eye to be operated upon, pin them up out of the way. It is also convenient to have another Compress & a piece of Roller at hand —

Operation. — In proceeding to the operation the Surgeon shd be seated on a high chair, the Patient on one much lower just before him. — The Patient shd not face the window as the light wd be reflected from the Cornea to the Pupil — An assistant shd be behind the Patient to support his head. To expose the eye completely the Surgeon inverts the ~~upper~~ under eyelid & the assistant fixes with his finger. — The skin of the upper eyelid is to be folded on the upper superciliary ridge, & the assistant also with his finger just under the Tarsus makes moderate compression on the eyeball. — The Surgeon himself draws down the under eyelid, & at the same time holds the knife ready in his

other hand. — If the right eye is to be operated upon use the left hand & vice versa. As soon as the eye becomes steady, as it invariably does for a moment shortly after being thus fixed; the point of the knife is to be placed upon the Cornea 1/12 of an inch from the Sclerotica — I say upon it, for it is not to be punctured until the eye gets fixed. When the surprize of the eye occasioned by the application of the knife ceases, pass the knife slowly but steadily across the Cornea — it will cut itself out — Never draw it back when once introduced.

If any part of the iris is in danger of being wounded disengage it by rubbing the Cornea with the end of the finger. — As soon as the section of the Cornea is made be very careful to make no pressure on the eye. The assistant then let go the

upper eyelid, the Surgeon the lower — When this is done the patient immediately closes the eye. — After desisting a minute or two that the eye may recover from the fatigue it has undergone, open it again & introduce the needle thro' the section of the Cornea, thro' the Pupil — tear the capsule of the lens by moving the hand in every direction. — Having sufficiently torn the Capsule withdraw the needle & make gentle gradual pressure, this will cause the lens to protrude anterior to the iris, & it may be extracted with the hook. — If any portion of the Opaque matter remain extract it with a Scoop, & if it fail with the Forceps — The eyelids are next to be closed & a compress applied over it — Retain this with a Roller & the operation is compleated —

Speculo are inconvenient & not necessary for performing this Operation —

A

Couching is much more simple
The Needle for couching shd be round with
a flattened point, & that a little curved. After
fixing the eye with a Speculum, pass the needle
into the Sclerotica 1/10 of an inch from the Cornea,
& carry it behind the Iris before the Crystalline
lens. When the point gets directly before the
lens, it is to be depressed by elevating the han-
dle of the needle. — I have that one powerful
reason why some Surgeons so strenuously advo-
cate Couching is because it is so much easier
performed than extraction.

Blindness is sometimes
produced by a contraction & closure of the
Pupil; or by specks or Opacity of the Cornea be-
fore the Pupil. — The effect is the same in both cases
viz blindness, as the transmission of the rays of
light to the bottom of the eye or Retina is preven-
ted. — When there is no Opacity of the Cornea but
the pupil is contracted & closed, cut a pupil

where it ought naturally to be. This is done with the same knife used in extracting the Cataract. Having pierced the Cornea as in the operation of extraction, before carrying the knife across the eye to the other side of the Cornea, elevate its handle so as to let its point dip down pierce the iris where you wish to form the Artificial pupil - the little flap of his wh remains is to be clipped off with a pair of very small Scissors curved at the point.

When the pupil is of its natural size, the Opacity of the Cornea exists over it preventing the transmission of the rays of light; in this case also an artificial pupil shd be cut opposite the transparent part of the Cornea. To do this having pierced the Cornea with the knife, extract it a little & let some part of the aqueous humour escape; by doing this part of the iris will fold over the knife; there is no danger of wound the crystalline lens or its Capsule, fm wh the most unpleasant conse-

quences might result — as Cataract fm Opacity of the lens or its Capsule. —

Some Surgeons are so much afraid of Cataract succeedg this operatn that in every instance after cutting the artificial pupil, they proceed immediately to the Operation of extracting the lens. This can never be necessary when the pupil is cut in the way we have recommended. — This operation will sometimes succeed completely, what we have most to fear is the consequent inflamn wh may defeat all our expectations even when performed in the most skilful manner. This circumstance shd be kept in view in giving yr prognosis previous to the Operation

Diseases in wh Respiration is impeded & the Operation of Tracheotomy

In some cases it becomes necessary to make an artificial open^g into the windpipe. The trachea has been generally cut, but of late years the French Writers have recommended a new method wh is to pass an elastic Catheter into the Glottis. The causes rendering this operation necessary are many

I Various inflam^y affections of the throat common in our climate. They seldom cut off the access of air to the lungs, tho' they sometimes do produce this effect.

II Tumours sometimes impede respiration by pressing on the Oesophagus & trachea or windpipe, lessening the size of this latter canal.

III The tongue is often so much tumified from the use of Merc^y as to press on the Pharynx & Oesophagus & produce the same effect

IV Extraneous substances lodged in the Glottis or Trachea

V In deep wounds of the neck fm an attempt to commit Suicide we are obliged to incline the head forward so as to keep the parts of the wound in contact wh being unfavourable we are obliged to introduce the flexible Catheter of Desault. In all such cases, & in apparent death fm submersion the flexible Catheter is far preferable to Tracheotomy, this being entirely unnecessary —

When the Elastic Catheter is put into the Glottis, it occasions much uneasiness & cough fm the irritation, but there is no danger in leaving it there for days & weeks, as experiments have fully shewn, the irritability being far less than we wd at first suppose. When first introduced it excites a convulsive cough particularly when there is inflamn as in Angina — When there is a tumour in the mouth pressing upon the Trachea, it is easy

to pass it into the Glottis thro' the Nostrils. It is always proper when foreign substances are introduced — In the case of the man who swallowed his money for fear of being robbed, Desaults elastic Catheter wd have succeeded instead of Tracheotomy — In fact it has many advantages over it — there is no difficulty in the Operation, no wound & no Fistulous Opening — How long a Catheter may remain in the Windpipe without danger we may learn from the case in the Hospital at Lyons — There were 2 Catheters introduced, one in the Pharynx & the other in the Glottis; by the first he was nourished, & by the last he breathed —

Tracheotomy is however sometimes necessary when foreign substances are lodged & can't be coughed up — Polypi & Excrescences impeding respiration so materially as to render it necessary seldom occur

Foreign substances are frequently lod-

ged in the ventricles of Morgagni, when this is the case they must be very small. It is known by violent coughing & difficult respiration — An opening shd be made below & the substance pushed up with a probe

It is easy to distinguish the introduction of the Catheter into the Glottis from its entrance into the Oesophagus — A Catheter shd be used twice as long as that employed for the Urethra. — It shd be taken hold of as a writing pen & introduced into the Nostrils & then into the Glottis. When it enters the Glottis there is a cough, tickling, inclination to vomit, & the flame of a candle is blown to one side by the air rushing out.

When it enters the Pharynx & Oesophagus, there is less irritation, no cough, the air is not forced out. — A small syringeful of water or milk injected thro' the tube is another means by wh you may incontestibly ascertain where the Catheter is introduced. for if the fluid goes to the Glottis there will be cough im-

tation &c. If to the Oesophagus no such effects will be produced. When the flexible Catheter is thus introduced, it shd be secured there, & gauze put over the mouth of the tube to exclude all extraneous substances. The tube shd be often removed & cleansed from Mucus &c

Bronchotomy.

There are two places where the puncture has been made. One on the lower part of the Larynx & the Trachea, or between the rings of the Windpipe. — If foreign substances are introduced there may be a longitudinal puncture or division. — Of late years the French Surgeons have divided the larynx between the Cricoid & Thyroid Cartilages — there being in that part skin & Cellular Membrane only. — There is then no hemorrhage a matter of much importance as it causes a delay in the Operation, & if any blood were to get into the Glottis it wd produce much uneasiness

The Thyroid or Cricoid Cartilage may be cut without danger — The Larynx is so well supported that you may cut into it without injury, but the Trachea possesses so much motion that there is danger of wounding the Carotid Artery — Laryngotomy is then far better & safer

Operation for Laryngotomy

The Patient is to be seated with his head inclined a little backward. — The Surgeon is to be before the Patient & feel for the space between the Thyroid & Cricoid Cartilages of the Larynx, over which he is to make an incision in the direction of the Trachea thro' the integuments, an inch long from the bottom of the Thy. to the bottom of the Cricoid to the Thyroid Cartilage — This may be done with a Bistory. It will then be proper to wait a little until the hemorrhage ceases when a perforation is to be made in the membrane between the Thyroid & Cricoid Cartilages — This may be done with a

Scalpel – the edges of the wound are to be seperated, & the Bistory passed low down to avoid the Artery under the Thyroid Cartilage. – A silver tube or Canula of an Angular shape shd then be inserted into this opening, thro' these two holes tapes may be passed – When thus introduced into the Trachea, its own shape will retain it there – The Tube shd be often removed to clear it of Mucus, & gauze put over it to prevent the introduction of foreign Substances

When the substance wt was the cause of the operation is removed, the tube is also to be detached, & the external wound brot together. Ad: plaister is rarely necessary –

If foreign substances exist in the Windpipe the Trachea may be stretched by forceps, & the substance taken out –

Obstructions in the Pharynx & Oesophagus, when to any extent endanger life by cutting off the usual supplies of nourishment –

The operation is not often necessary, for it is generally better to pass in the Bougie - But when there is a Spasmodic Stricture of the Glottis the operation becomes necessary, for if the Bougie be introduced it will produce so much irritation as sometimes to cause death -

When the Oesophagus is cut for attempts to commit suicide, no attempts to swallow are successful, the fluid returns by the mouth or thro' the wound -

Strictures of the Oesophagus -

As this is a muscular Canal & capable of contraction it is sometimes the seat of Spasm. Foreign substances sometimes enter the Oesophagus - A boy who was eating a dried peach had the misfortune to let the stone slip down from the Pharynx into the Oesophagus, where it was retained by a Spasm of that Organ. I once saw a preparation of the Oesophagus in Mr Hunters collection in wt a half crown

was retained by a similar spasm — The man was in the habit of swallowing half crowns for the Students & after many successful swallowings he one day got fixed. The first Surgeons in London could afford him no aid by probangs or hooks — At last vomiting hemorrhage & death succeeded

Other Bodies such as a large piece of meat not sufficiently masticated are sometimes stopt in the Oesophagus by a spasm, & retained there for many days

The instrument generally used is a Probang, made by tying a piece of Sponge to a flexible whalebone, or what is better a Bougie — This instrument dipt in Oil or Molasses is introduced thro' the Pharynx into the Oesophagus, where by moderate force it is easy to push the extraneous substance into the Stomach.

At times however the obstruction is so great that it is impracticable. In the case of the Peach stone & other substances firmly

lodged I have used a Solution of Tart: Emet: 8gr to ℥ij of water, & direct the Patient to gargle it in his mouth & if possible to swallow some — As soon as Nausea is produced there has been a relaxation of the parts, the spasm ceased, & it was easy to push it down into the Stomach, to swallow it, or for the patient to throw it up — In the same way I was successful with a large piece of meat wh was retained, & once with a Cent. The agitation & distress of the Patient is extreme, which the Probang has proved fruitless (for by pushing too hard you may break the Oesophagus) The Tart: Emet: shd be tried —

In some cases however the head of a bone, a pin, or other small pointed bodies stick in the Tonsils & cannot be pushed down — You may then direct the Patient to open his mouth as wide as possible, & you will very probably be able to see the Substance & extract it with a pair of curved Forceps — If they are so low

that you are unable to see them you may feel them with yr finger & direct yr forceps by that.

When neither of these methods succeed & they are so lodged that you can't extract them, you may be sure that suppuration will take place, the substance will become loose, & fall down spontaneously into the stomach or be swallowed. It may be proper to observe that however sharp the substance may be there is no danger of its wounding the stomach & Intestines. The practitioner shd not forget this fact, as this circumstance always produces great anxiety in the Patients mind & he will thus be enabled to relieve it.

Strictures of the Oesophagus are not very common, but are often very obstinate so as to preclude the possibility of swallow. There are two methods of nourishing a Patient in this situation — 1 By Clysters —

2d By a tube passed into the stomach —

Clysters cannot afford sufficient nourishment & are not to be relied on

Mr Hunter used an Eel skin

Desfault's Catheter in the nostrils & passed in the nose straight down into the stomach is the best means of accomplishing this end. If any difficulty occurs, a curved Pellett may be used. — A syringe filled with rich soup may easily be conveyed thro' the Catheter. If it enters the Glottis instead of the Oesophagus, the blast of air & great irritation will soon convince you of the wrong direction of yr Catheter

A swelling fr inflamn of the Pharynx may also impede deglutition

In the permanent Stricture there is a narrowing of the parts, thickening of substance & at times a total obliteration of the Canal. It precisely resembles Strictures of the Urethra, & we also find permanent Strictures occurring here. — The difficulty of swallowg increases until fluids only can

pass & even these at last produce suffocat^n from passing into the Glottis instead of the Oesophagus, hunger, emaciation & exhaustion, & the Patient is literally starved to death. Suffocation is induced from any attempt to pass the instrument into the Oesophagus during the last stage Mr Hoare says a Bougie of waxed linen sh^d be used small at first but gradually increasing in size. It sh^d be treated just like Stricture of the Urethra. Two bougies sh^d be at hand, with one passing into the Oesophagus, feel the Stricture, & then making the Patient close his mouth let him mark with his teeth the place. To the other bougie affix Caustic, & mark by the first u^n entered the depth it sh^d go In this manner apply the Caustic to the stricture once in 24 hours for 30 seconds at a time. Let the instrument armed with the Caustic have the same curve as that u^n first entered that the caustic may not be applied to sound parts & create unnecessary pain

Polypi —

Polypi are fleshy excrescences of various colours & sizes, arising from the lining membrane of the nose, rectum, uterus &c but most commonly the nose. — They are produced by a thickening or growth of the Schneiderian membrane — They appear in the nostrils like a small pendulous tumour. — At first there is no other inconvenience than a tickling of the nose wh induces sneezing & a flow of water from the eyes —

It commences at the inferior turbinated bone. is sometimes soft at others hard, at times insensible at others acutely sensible — sometimes pale, at others red or livid — sometimes they bleed profusely, at others not at all. They arise from the Ossa Spongiosa & all parts wh form the cavity of the nose. At first the symptoms are light, but after a while there

is a deflexion for the eyes, sneezing. There is an alteration in the voice. Their size changes accord^g to the weather, being small in dry & larger in moist weather. After they increase much in size no air enters the nostils, breathing is considerably affected, there is a peculiar nasal tone of voice

When it projects out of the Nostils & thro' the Posterior Nares in the fauces. That portion within the fauces increases very rapidly. The Polypus assumes the form of the cavity of the Nostril, fitting it like a mould. It extends for the Anterior Nostril & fauces behind over the soft palate, & behind the Uvula. The eyes are suffused with tears there is an obstruction to the Ductus ad Nasum. At times there is an ulceration & discharge of fœtid matter, the tumour is often large & without pain, the Patient sleeps with his mouth open, the hearing becomes at last injured by pressure on the Eustachian tube, & deglutition dif-

ficult for prepare on the Velum Pendulum Palati. — The root of the nose is swollen. the bones become carious, an ulcer is formed, hemorrhage takes place, the teeth fall out, a fungous exists in the socket, all the symptoms tend to emaciate the Patient, & finally if surgical aid be not speedily afford, coma & death close the scene.

The Causes are unknown, for those are certainly in an error who suppose they arise from picking or blowing the nose.

Authors in treating of Polypus distinguish between such as are Malign^t & not to be touched & others that are mild & may be extracted. But they are all alike, & I advise extirpation always & in all cases in the earliest stage.

Polypi may be extracted from the nose in 3 different ways —

1 By cutting them out

1 By seizing them with Forceps & pulling them away

III By passing a wire round the Polypus so as to interrupt the circulation to it cause its death & seperation by the absorbent vessels. The wire is to be fixed round the Basis of the Polypus, drawn tight & fastened by winding it round the handle of a Canula

Polypi generally grow from the inferior turbinated bone – They are not only visible in the Posterior Nares but project behind the soft Palate in the throat.

The curved forceps frequently answers to pull it away from its attachment. The pinching also greatly assists in promoting its death. A portion only of the Polypus however is sometimes removed, requiring a repitition of the Operation. – But at times the turbinated bone & whole of the Polypus is removed rendering the Operation complete

The hemorrhage from extraction of the Polypus has greatly alarmed many Surgeons. When you first take hold of the Polypus with the

forceps the hemorrhage appears to be great but never let this alarm you for it is not of long continuance. the wound is a lacerated one & the vessels can be easily closed - A plug put thro' the nostrils in the Posterior Nares, or stuffing the Nostrils with lint or tow will effectually stop it - I never had occasion to do this but once. Then I did not but the man had a considerable distance to return home where had any hemorrhage occurred I could not have seen him for some time. Unless the basis of the Polypus is very large it is easy to extract it in this manner.

When this is not practicable, a ligature of flexible silver wire passed thro' a double Canula, & thus introduced into the Nostrils over the base of the Polypus - You pass the wire thro' the nostrils & push it to the root of the Polypus by means of a curved probe: the wire is then to be drawn tight round the Polypus by pulling it thro' the Can-

cula, & letting it remain in that situation for 24 or 48 hours — The circulation being thus interrupted, it will die & be separated by the absorbents in 10 or 12 days —

When the Polypus projects into the throat the ligature passed thro' the nostrils by a double Canula, & with a curved probe is to be fastened on the Polypus; or by putting the finger in the throat & fauces & pushing the wire round the projecting end of the Polypus — the Canula is to be continued 7 or 10 days — One inconvenience attend^g the use of the wire is that the Polypus often becomes suddenly loose & falls down in the Pharynx where for its large size it being impracticable to cough it up, it produces suffocation by falling over the Glottis — I have actually heard of death in one instance being induced in this way. — It is therefore prudent if possible (I say possible for it is no easy matter) to fasten a ligature on the Polypus projecting

in the fauces by wh means it may be easily drawn out. Or with a hook twice a day catch hold of the projecting end & see if it be loose enough to extract. A case came under my care where the Polypus thus suddenly fell down in the Pharynx. I found the Patient on his back & when I told him to get up & let me examine his throat he told me if he got up he wd certainly die. When lying on his back the Polypus fell to the Posterior part of the Pharynx & he breathed easily, but when in an erect posture it fell over the Glottis & obstructed respiration. I took hold of it by a hook & thus extracted it. But it is a dangerous circumstance, & shd be obviated by one or other of the cautions just mentioned. In a Patient at the Hospital where the wire & forceps had both failed I made use of a piece of tape, stiffened by means of a flexible silver wire run thro it.

the tape I passed thro' the mouth over the end of the Polypus projecting in the fauces, & tied a knot over the end of it, taking care not to include the Uvula in the knot. When thus secured I with a little force easily extracted it. When the attachment of the Polypus is by a very broad basis, neither the forceps nor wire will answer, & then it is to be cut away with a curved blunt bistory passed between the Nostrils & Polypus — It's necessary in this case to make compression by the tow. If you see the basis of the Polypus & think it will rise again it is proper to apply Caustic to its root — this is to be done by a pair of forceps one side of wh. is to be covered with linen spread on bees wax, passing the other wh. is bare & uncovered, & with the lunar caustic on it, to the Polypus

Hare Lip

This is generally situated on the upper lip & takes its name from its supposed resemblance to the lip of a hare. Sometimes only one, & at others 2 slits exist. Persons are generally born thus, but it may be produced by wounds on the lip, & when the divided surfaces have not been sufficiently brought into contact. In children born thus the fissure frequently extends not only thro' the soft parts, but also thro' the superior maxillary bone & palate, forming a communication from the mouth to the nose. When this is the case the fluid in swallowing often runs out from the nose, & the voice & speech are very materially altered. In all such cases it is necessary to cut down the edges so as to make a recent wound of the Hare lip, & then the parts are to be brought into close contact & secured by the interrupted or the

twisted suture, the latter is preferable
Sometimes it happens that a tooth, or a
piece of jaw bone projects – In the first place
it will be proper to extract the tooth, & in the
latter to remove the jaw bone – If the Patient
be troubled with Cough it is improper to at=
tempt the Operation, as a fit of Coughing w^d
burst the pins after they had secured the di=
vided Surfaces

It has been said that the Operation is un=
safe & improper in Children – Nothing can
be more erroneous, there is as much safety
in the Operation on a child of 2 or 3 years
old, as in a person of 20 or 30. If the fissure
sh^d extend thro^d the roof of the mouth to the
Palate, it sh^d be opened in infants as early
as the 2^d month, as the sides of the fissure
may then be torn off –

When a double fissure of the lip exists
you are to operate on but one at a time, for
if both were operated on at once the inflam^n

excited wd be so great that the ligature wd have to be divided, & thus render the operation abortive — It might even end in mortification

The use of Scissors have been objected to on acct as it is said of their contusing the parts. But if the scissors be sharp (& every Physician ought to be careful to have them so) the incision will be made more complete & with less difficulty than if we were to use a Scalpel the incision shd extend completely above the upper angle of the fissure, & form as nearly as we can effect the two sides of an equilateral triangle ∧ for the union otherwise wd not be neat. — After the whole of the edges on each side of the fissure are divided, the raw edges are to be approximated, & two pins either of gold or Silver introduced to keep them so; the lower one first the upper one next. These pins shd have moveable steel points because steel can be brot to a finer point than Silver

or gold. A ligature consisting of a couple of long coarse threads well waxed, is then to be applied round the needles either in the form of a reclining ∞ or a stand^g 8, & the steel points are then taken away wt is easily done as they ought always to be moveable. It seldom happens that much hemorrhage occurs — if however on making the suture there sh^d be too much, the needles are to be removed & the bleed^g vessels secured by a ligature, & then after 3 or 4 days being removed, the granulations of the part can be easily made to unite. In about 4 days the pins may be drawn out by means of nippers or pincers, but the ligatures will adhere to the lip by coagulated blood, & they sh^d be suffered to remain as they perform the part of ad: plaister, & will afterwards voluntarily drop out. If the pins are not removed in 4 days, ulcerat^n will render the holes large & produce disfiguration.

It only remains to add that the Surgeon should be as nice as possible in bringing the sides to fit exactly, & prevent as far as possible a large scar & consequent deformity.

Schirrus Tonsils.

These sometimes become so large as nearly to fill up the whole of the fauces by wh. means deglutition is impeded & the voice impaired. They always require extirpat.n & after that they never grow again. Tho' they are called Schirrus there is nothing cancerous about them, & there appears to be only a thickening of the gland by ad: inflam.n.

When the basis of the Tonsils is small, so that the whole can be cut off at one or two strokes, the most expeditious way of extirpating them is to snip them off with a pair of curved Scissors, called, for their use Tonsil Scissors. But when the Basis of the Tonsils is broad, & it is necessary to cut with the Scissors several

times, they shd never be used, as on the first incision the blood will Coagulate in the fauces & prevent you from seeing the Tonsils. Some blood is also apt to fall into the Glottis, & interrupt the Operation: the hemorrhage is never great, but it produces much inconvenience.

The Second Method is to tie a ligature round the base of the Schirrus Tonsil, so as to stop the Circulation, produce death, & cause a seperation by the absorbants — the time of seperation is from 4 to 10 days. — the wire must be passed thro' a double Canula, a noose made on the projecting tonsils, & tied to its base by drawing the Canula — As the Canula is often disagreeable to the Patient it may be sufficiently strangled in 2 days, & the edges of the part clipped off with a pair of bent scissors the parts being dead there is no danger of any hemorrhage occurring — this is the best method

We are often called in to open abscesses

in the tonsils & to scarify them — this is generally done with a scalpel covered with lint linen except at its point. — A much better instrument is a lancet concealed in a Canula, & made either to project or to draw back. — When this is introduced the tongue can be held down by the Canula, & you have only to project the Lancet out by means of a Spiral spring. — But when the scalpel is used one hand must be employed in holding down the tongue with a tablespoon. The depth to wh. you wish to project the lancet is to be regulated by a Screw on the handle. —

Hernia

In the general acceptation of this term, we mean a tumour made by the protrusion of some part or parts wch are naturally contained in the Cavity of the abdomen

The Tumour generally takes place at the Umbilicus; at the Abdominal ring; the upper & fore part of the thigh under Poupart's Ligament — But Hernia may take place at other parts. When the protrusion occurs at the Naval it is called Umbilical Hernia or Exemphalos — When at the abdominal ring, Bubonocele, Inguinal or Scrotal Hernia — And when under Poupart's Ligament it is called Femoral or Crural Hernia.

The Causes of Hernia are all violent compression of the Viscera of the Abdomen, for as they fill that cavity, any strain must tend to make them endeavour to find

an exit, this they will do at the part where there is the least resistance, hence the causes that produce rupture are violent exercise, raising weights, climbing, & any action that gives rise to great muscular exertion. Weak abdominal parieties, general debility disposing to it – Hard Coughing – & in a few instances Pregnancy. – The term rupture however is improper, for it has been supposed that Parietes of the abdomen are torn when Hernia takes place, but this is not the case – the peritoneum is very elastic & passes down before the protruded parts. – There is an exception however to this, & that is when Hernia Congenita, as it is called, occurs. – In this species of Hernia the sac is the Tunica Vaginalis Testes. – When the closure of the upper part of the Tunica Vaginalis does not take place soon after the descent of the Testicle, as it commonly does, Hernia Congenita may be formed by a portion of the

intestine insinuating itself into the open.
Generally the part closes before birth, but
if it does not any straining or crying of
the child may produce Hernia Congenita
The intestines here extend along the Scrotum in
the Male, & the Labia Pudenda in the Female
The tumour may be easily pushed up by the
mother or nurse, but as long as the Tunica Va-
ginalis is open, so long will the Patient be
liable to a protrusion of the part

In Hernia the protruded parts commonly
consists of Omentum & a portion of Intestine,
but occasionally each of the viscera of the
Abdomen, except the Duodenum & Pancreas,
has been found in the Hernial Sac. If the
Omentum is protruded it is called Epip-
locele — If the Intestines, Enterocele — & if
both, Entero Epiplocele &c.

In what follows I shall speak particularly
of Bubonocele & the operation connected with
it, & afterwards make some observations

on the other kinds of Hernia

Bubonocele.

The existence of Bubonocele may be known 1 By the swelling beginning at the ring of the external oblique muscle, & proceeds downwards to the Testicle — The testicle can be felt below & behind the tumour in most cases — The tumour is enlarged by sneezing or coughing & whatever compresses the abdominal viscera; the bowels do not perform their functions naturally — When the patient lies in an horizontal position with his hips elevated, the contents of the tumour return into the abdomen, or it may be pushed up by the Patient or Surgeon, & again returns when the Patient is in an erect posture, when he coughs &c The tumour is attended with but very little pain & perhaps none, & bears handling well.

If the Omentum is protruded the tumour is uneven. & if the intestine, smooth. These symptoms in most instances characterize the disease, but it has been mistaken for other diseases & other diseases for it, & it is of the utmost importance to be well acquainted with the characteristic symptoms of Hernia, as well as to be able to distinguish it from other affections. The diseases with wh. it has been confounded are 1 Venereal Bubo, 2 Swelled Testicle, 3° Hydrocele, 4 Lumbar abscess — 5 Cysts of the Spermatic Cord 6 Varicocele & Hematocele — & in the

1st place Venereal Bubo. — This is generally preceded by Chancre on the Penis —

2d In Bubo the Glands are swollen & inflamed, hard & painful — It does not bear handling — this is not the case with Hernia

3d There is no obstruction to the passage of alimentary matter, wh. frequently occurs in Hernia.

4 In its advanced stage when it suppurates

you will be sensible of the fluctuation of matter. Add to this that Coughing, or any exertion of the Diaphragm & abdominal muscles have no effect on the tumour & it does not appear on lying down

A Swelled Testicle may be distinguished from Hernia by the swelling beginning in the body of the Testicle, while in Hernia the enlargement begins at the abdominal ring & progresses downwards – the Spermatic cord may be distinctly felt

In swelled testicle the tumour is hard & permanent, solid & heavy, flattened on the sides from the pressure of the thighs. It does not retract on lying down, nor does it disappear on pressure, whereas Hernia does if there is no Stricture – Coughing &c has no effect on swelled testicle. but it increases the Hernia. – It is tender & painful to the touch, & is generally the consequence of of suppressed Gonorrhoea

III In Hydrocele the swelling begins on the lower part of the Scrotum, in Hernia it begins at the abdominal ring. In Hydrocele the tumour is Circular, the fluctuation evident. It is generally diaphanous, so that by applying a candle behind it transmits a feeble light. The Spermatic Cord can be distinctly felt. The size is not altered by any position of the body or any exertions of the abdomen.

IV When the tumour is formed on the upper & anterior part of the thigh by the matter of Lumbar abscess, by placing the Patient in a horizontal position, the fluctuation may be felt by making alternate pressure on the tumour & abdomen, & by the Signs we have mentioned when speaking of this disease such as pains in the Loins &c &c.

V But it may be most difficult to distinguish it from an encysted tumour high up in the Spermatic cord, for this bears a

stronger resemblance to Hernia than any other disease, as it seems to be continued from the abdomen downwards, is soft, the whole of the tumour may be pressed up thro' the abdominal ring, but as soon as the pressure is removed it descends to the Scrotum. Lateral pressure has no effect in diminishing its size, & the whole of the tumour may be pressed up thro' the abdom.l ring as one solid mass. If a candle be brot near it will appear Diaphanous, by this last sign particularly I extricated myself from great difficulty in such a case, when to add to the embarrassment coughing & exertion produced a very sensible effect on the tumour.

6 A Varicocele, or a varicose state of the veins of the chord may be distinguished by pressing the whole tumour up thro' the ring like a Hernia; but if you hold yr finger on the ring after its reduction the tumour will still form in the vari-

ocele in a short time This wd not be the case in Bubonocele.

Hematocele or a tumour fr. Hemorrhage is easily distinguished by its colour tension &c

I must again observe that it is of the utmost consequence to recollect these distinctions for very dangerous & even fatal consequences may arise for mistaking Hernia for any of these affections — If for instance you mistook Hernia for Hydrocele & injected a stimulating fluid into the Hernial sac, or punctured the intestine with a Trochar, it is not easy to conceive how much mischief might be the result — It must necessarily involve the Patient in much danger — & not unjustly throw a stigma on the Surgeons reputation

Hernia seldom exposes the Patient to much inconvenience when it goes up on lying down, but as long as it continues

down, there is continual danger of its being strictured by the abdominal ring, & inflammation taking place. It is therefore always proper to return the protruded parts into the abdomen as soon as they descend & prevent their descend^g again by a Truss. This is composed of a slender steel spring long enough to go round one half of the body (the other part being composed of flexible leather) with a pad fixed to it & an under strap to keep it from slipping up.

Hernia has very properly been divided into the follow^g stages —

1 That wh^t admits of easy & immediate reduction

2^d That wh^t requires judicious treatm^t to effect its reduction

3^d That wh^t cannot be reduced altho there is no stricture

4 That wh^t requires a Surgical Operation

In the first species when the Patient is laid upon his back with his hips eleva-

ted, he can generally return the intestine himself by making pressure on it. but if not the Surgeon sh^d reduce it by grasping the tumour & making pressure on it. After the Hernia is reduced apply the truss to prevent its descending again. This must be worn until the opening wh^ch allowed the protrusion is closed. This in some cases of children takes place in 9 Months, but in others it will not, & in old people the truss must be worn continually. Great care sh^d be taken to apply the Truss in its proper place. The Surgeon is first to feel for the Opening at the abdominal ring thro' wh^ch the protrusion has taken place, & then apply the pad of the Truss directly over it; the lower edge of the Truss just above the upper edge of the Os Pubis: for if you apply it on the Os Pubis it will cause great pain, & yet its pressure on the Spermatic Cord, a swelling of the Testicle will take place. On the other hand if you apply it

too high it will be ineffectual & of no use. As soon as applied Cutton is bound the body. In every case where this can be accomplished it ought be done, & the hazard of stricture &c ought be avoided. But there is often much difficulty in return^g the protruded parts in to the abdomen. The impediments to the reduction of Hernia are

1 The large quantity protruded

2° When the parts have been long down & have changed their shape

3° From adhesions existing between the sac & its contents, or between the different parts of the contents of the Sac —

1 When it is difficult to return the protruded parts on acct of their bulk, place the Patient in a horizontal position with the feet of his bed elevated, his hips higher than his head; & with the Patient in this position try to reduce the Hernia. To empty the contents of the bowels in the Sac prescribe purges

daily; very low diet shd also be used. If these means assisted by the Taxis fail, it is proper to suspect that the protruded parts are altered in shape, or that adhesions exist. In either case to prevent further mischief, advise the use of a suspensory bag of soft materials to sustain the weight of the protruded parts, & to prevent their increase. But if the Patient be negligent in the applicatn of the truss, or in doing any thing to prevent it, the intestines are liable to Stricture

Strangulated Hernia

We come now to treat of that state where frm a Stricture of the parts remedies more prompt & powerful are to be applied

The Symptoms of Strangulated Hernia are 1 the tumour wch was before soft becomes hard & painful to the touch, difficulty of standg upright as it increases

the pain, followed by nausea & vomiting. Fæces are sometimes vomited up, obstinate costiveness, frequent hard contracted pulse, tumid & painful abdomen. Finally, coldness of the extremities & death — If these symptoms be not speedily removed the stricture of the neck will become so great as to prevent the return of blood by the veins, inflam^n & swelling will succeed — the colour of the intestine is much darker than the common inflam^n occasioned by the compression made by the stricture preventing the return of venous blood, & mortification sometimes ensues. — It is very remarkable that delirium seldom takes place. — It is said the symptoms are not so violent f^m protrusion of the Omentum

Treatment. — As long as strangulation continues, there is great danger. To relieve a Patient thus circumstanced, he sh^d be placed in a horizontal position with the feet of his bed higher than the

head. His legs elevated — in this posture gravity favours the return of the protruded parts. The thighs are to be brot close together, & bent to a right angle with the body. — You will generally find the Patient himself endeavouring to return the parts. The Surgeon shd grasp the tumour & try to empty the sac by pressing the tumour fm behind upwards & downwards in the direction of Poupart's Ligamt towards the anterior Superior Spinous process of the Ilium — This operation is called the Taxis in contradistinction of the operat. of dividing the parts to return the gut. The pressure shd not be very great as the parts may be injured — By perseverence in this way the tumour is sometimes reduced.

If this plan of treatment be unsuccessful the Patient is to be bled ad deliquium animi & the taxis again resorted to

Cathartic med: are then to be tried. The

best cathartic is a mixture of Cream of Tart. & Jalap given in small doses & repeated, for if much be given, the patient is not able to retain it on her stomach. Here must be aided by active Clysters particularly if the former produce sickness at stomach & vomiting — Mr Hay says no Purgatives sh^d be given by the mouth, but in Entero Epiplocele or simple Strangulation of the Omentum. But they are very advantageous, & particularly in old & long standing Hernia, when there is a morbid affection of the Intestinal Canal.

The warm Bath at 100° is next to be tried & the patient kept in it until he faints at wh^ch time our efforts to return the Intestine sh^d be renewed.

If this remedy fails we must have recourse to tobacco smoke, or an infusion

of Tobacco. The last is the most convenient, it is made by pouring Oj of boiling water upon Zj of Tobacco & inject ½ pint of this every ½ hour till sickness & vomit.g is induced – it shd not be more for death has occured by injecting too large a quantity. When this is injected it produces a universal relaxation of the system, & you may then often succeed by the Taxis

If this does not succeed Opium has been used with success – Opiates suspend the sickness & vomiting, but large doses shd be given say 2 grs to adults by the mouth, & if injections are used Zij of Laud: I knew a case of a man with incarcerated Hernia who took 3 grs of Opium at night & having his hips elevated, in the morn.g the Hernia was found reduced; the weight of the intestines here drew the part out of the sac, while the Opium removed the Spasm

Cold applications may next be

tried. Ice pounded & applied in a bladder over the tumour & the abdominal ring — if ice is not to be had, Cold water & Glaub: salts or Sal Ammoniac

If relief be not obtained by some of these means, the symptoms may perhaps remain stationary a day or two; much more frequently however every symptom becomes worse, the sickness & vomiting become more distressing, the swelling of the tumour & tension of the abdomen greater, there is great restlessness. — After a while the pulse flags & the patient sinks, hiccough comes on tension of the abdomen abates, the Hernia is reduced spontaneously & the Patient feels easy. — These deceitful appearances however are soon followed by death, as these symptoms are owing to mortificat^n in the bowels or inflam^n of the Peritoneum, or f^m both these causes. Mr Home says a general Coldness of the body attended with mois-

ture is always a forerunner of death, & promises no success to the Patient if it has been delayed to that time. This unpleasant termination may be frequently prevented by an Operat^n wh^h consists in dividing the stricturing parts. As some have escaped death after strangulation of the Intestines for several days without the Operat^n, it has become a question with Surgeons at what time the operation sh^d be performed. It can be of no use to attempt to point out the precise time at wh^h the operation must be had recourse to, the urgency of the Symptoms must be the plea for our endeavours with the other remedies, & if these fail the operation alone remains. I hold it as a general rule, & such as I always follow myself, that when all the above remedies have been ineffectually employed, we sh^d proceed to the Operation without loss of time. It must be performed before sore-

resp & tension of the abdomen occur wh indicate inflam^n of the Peritoneum. This operation if performed in the manner I shall presently describe without open^g the sac is attended with no danger. In 30 or 40 hours all these remedies can have a fair trial, & during the whole time of their exhibition the patient is to be kept with his Pelvis higher than his body, this thighs bent on the Pelvis.

In performing the Operat^n for Hernia, it has been recommended to open the Hernial sac in the first instance; but by thus exposing the cavity of the Peritoneum wh^d run great risk as peritoneal inflam^n wd most probably take place. There can be no advantage in open^g the sac & the parts can be reduced without it. This operat^n is a more speedy one, is attended with less pain & danger & if it sh^d be found insufficient for the purpose, the operation of open^g the sac can be after-

wards performed

Operation. Before proceed^g to the operation the Pelvis is to be shaved —

The first thing to be done is to lay bare the tendon of the external Oblique Muscle & the parts performing the Structure — This is to be done by commencing an incision with the Scalpel beginning directly above Poupart's Ligament about 2 inches from the abdominal ring, & continuing the incision in the direction of the ligament down to the abdom^al ring & about 2 inches down the tumour (After you divide the Skin & Scrotum you find tendinous bands which appears to be the Fascial of the External Oblique Muscle — Next you come to the Fibres of the Cremaster Muscle, then the Hernial Sac. The Spermatic Cord lies in the upper part, the Testes at the lower — Between the neck & the Symphisis pubis lies the Epigastric Artery. In some rare cases it lies anterior to the Spermatic

Cord tho' generally behind) Having thus exposed the upper part of the tendon I dissect downwards carefully removing the cellular substance until the tendon & ring under the incision be completely exposed — the ring will easily be found as it lies in the depression formed by its binding down the sac. If the stricture be made by the ring you will see a depression there directing you when the next incision is to be made — Next cautiously scratch a hole thro' the tendinous fibres with the point of the knife about an inch above the abdominal ring — under the sac — this part is to be cut thro' by passing the back of the knife along the groove of the Director. By this operat^n it is clear that the stricturing part will be divided, & it will then be easy for the Surgeon in most cases to reduce the protruded parts by the taxis without open^g the sac

This operat^n is very simple & succeeds in most cases of recent strangulation. It is

always advisable except where the Symptoms shew mortificat^n has begun

It has been objected to this Operation that we cannot by it have an opportunity of examining the protruded parts; this is true, but if it be proper to return the parts by the taxis without any operation, it is certainly equally safe to return them by the Operat^n for this can make no change in the parts —

There are no cases of Bubonocele attended with stricture alone but what the foregoing Operation will be sufficient to answer every purpose. But in some cases after the tendon is divided the Surgeon is unable to return the protruded parts, in consequence of the parts having altered their shape, or of adhesions existing among them. — Sometimes Symptoms of Mortification are present, & in such cases it w^d be highly improper to return the parts even if it were practicable; — in such cases it becomes absolutely ne=

essary to open the Sac. — This is to be done in a very gradual cautious manner. The integuments are first to be divided beginning at the top of the tumour & continuing down to the bottom — directly under the Skin we meet with the tendinous expansion, this must be cut thro' & next the Cremaster muscle, below this is the Sac — here we must cut very gradually using a probe to tell us when we have cut thro' as it will discover sooner than the eye — After the hernial Sac has been exposed it is to be cut by light nice strokes of the knife, a small open^g is to be made the finger is then to be introduced thro' the opening under the structured parts, & the parts on the finger are then to be divided by passing a Bistory along the finger — the whole of the blade of the Bistory is covered with wax except just at the point. — On open^g the Hernial Sac you will discover what prevented the success of the first operat^n; if adhesions

have taken place between the protruded parts. these adhesions are to be divided by the fingers, or if necessary very cautiously with the knife. If an alteration of the shape of the protruded parts prevented their return, dilate the ~~parts~~ stricture sufficiently to let them pass. — If the Omentum be altered in shape & difficult to return, it may be cut off with safety —

The Stricture is sometimes formed by the neck of the sac, & not by the tendon. In this case if the Stricture can be felt it must be carefully divided — When the finger is passed to the upper part of the sac & the Stricture found there it is to be divided by a curved blunt pointed Bistory — The Stricture is to be cut upwards & a little Outwards — Mr Cooper says between the Sac & ring (The Epigastric Artery lies on the inside of the Orifice of the Hernial sac) — Dr P. — mentions 2 cases of this kind, in cutting down to the ring

it was found quite loose & flaccid. In one case the stricture was within the Abdomen, & from being out of reach the Patient died. — In such cases it is proper to divide above the ring until we come to the stricture, & then a small opening answers every purpose.

We have already observed that when symptoms of Mortificat^n are present it would be ~~the~~ improper & impracticable to return the parts in this situation. — Whenever the intestines are gangrenous, such portions must be cut off, & the divided ends of the intestine are to be united by the interrupted Suture (or stitches) as formerly described in treating of wounds of the Intestines. This is the practice of many eminent Surgeons, but by no means mine, for dreadful symptoms may thereby occur. My chief reason for not stitching & returning them into the abdomen in this way is that virulent matter may escape into the cavity of the belly & occasion Peri-

tonal inflam^n wh^n proves fatal — It is not therefore as some may suppose from an idea that the ends of the threads wd irritate the parts for that will loosen & pass off internally with the fæces —

Whenever therefore the Strictured intestine is strangulated, a puncture shd be made thro' the mortified part immediately, that the fæces may flow out, wh^n will immediately relieve the Patient. — If the Intestine is mortified entirely around, it shd all be cut away & the 2 ends brought out & confined to the sides of the Incision along with the Mesentery by stitches thro' wh^n the fæces will be discharged. The two ends of the intestine will then resemble a double barrelled gun — then make an open^g from one into the other thro' the contiguous lateral septum 1 or 2 inches from the ends of the intestine. — By keeping a compress of soft lint or tow to the open mouths, by these means the Patient will be tolerably comfortable &

the feces will pass thro' this opening & eventually be discharged per anum. The intestine will spontaneously sink into the abdomen.

Sometimes only the external coats are gangrenous, leaving the villous entire. In this case open this to discharge the feces & keep the intestine by stitching it to the side of the abdominal ring — the parts will gradually heal & retract when the ligature is cut. —

The Omentum must next be attended to — If any part of it be in a state of mortification, the parts are to be cut off with a pair of scissors or knife; & if any hemorrhage shd take place the vessels are to be secured by ligatures & the ends brought out at the external wound — Before you cut the Omentum see that there is no intestine in it. It is of immense importance to know what parts of the Omentum are dead & what

living for you are to cut only on sound part, for if you leave any dead part it will produce suppurat^n all around — And it is necessary to have some rule to judge by — If you cut one or two of the vessels at the dead part, the blood will be coagulated & of a dark colour; the pressure does not empty their contents. Cut now if you cut sound parts fresh blood will immediately issue out

Should the Omentum adhere firmly to the sac, & we are convinced that all the protruding intestines are returned, we may let it remain & no inconvenience will ensue

The older Surgeons before cutting off the mortified portion of the Omentum used to tie a ligature round the sound part of it to prevent Hemorrhage, but this is improper for it causes great pain & inflam^n & is quite unnecessary.

After either of these Operations, viz merely dividing the stricture without open^g-

the sac, or opening the sac & dividing the stricture, apply strips of ad: plaister — Over these a pledget of lint spread with mild Cerate is to be applied, over that a compress & the whole to be secured by the T bandage.

As any bandage however round the abdomen diminishes the size of its contents & causes pressure ad: plaister has been recommended, but they soon yield & do not well answer. — Two steel springs are best adapted for this purpose, one part of it has a ring on wh a compress is fixed — this has two points of pressure, one on the back & the other on the navel — It is to be covered with buckskin leather. — As soon as the wound heals a Truss is to be applied, or the bowels will descend again. — When it has not been necessary to cut the ring high up, or between the sac & abdominal ring, altho' you have opened the sac a truss is necessary

If the Scrotum has been cut low down

it must be stitched. Patients may recover after this last operation, but such recoveries are rare. Dr P. read a case wh came under his care where the Patient recovered.

I have known Strangulated Hernia mistaken for Colic, & therefore it is always proper in obstinate Costiveness, especially in women to inquire whether there be any tumour in the groin or fore part of the thigh.

The Patient is to be kept in a horizontal position, to avoid straining in evacuating the intestines; I allay his cough by demulcents, taking care not to exhibit Opium so as to produce costiveness — A few hours after the Operation generally produces a Stool, but if this don't take place they are to be aided by Castor Oil, the bowels being often rendered weak & Paralytic by the Compression they have undergone —

Pain, tension of the abdomen or Fever coming on call for the lancet, purges

low diet & a blister to the abdomen

Femoral Hernia

In this species of Hernia the parts are protruded thro' the Femoral arch under Pou: parts ligam.t & the tumour is on the upper & anterior fore part of the thigh - the Intestines pass down under the Aponeurotic sheath that covers the great Vessels of the inferior extremity - the Fascia Lata of the Femoral Ligament causes the Stricture accord.g to Mr Hay - this Mr Gembernat first published & it was adopted by Hay

When it is necessary to perform an Operation for a Stricture here, it is best to open the hernial sac in the first instance this must be done with great caution for the sac is often extremely thin - After having opened the sac, great care is requisite in dividing the Stricture so as to avoid the Epi-

gastric artery, the Spermatic cord & great crural vessels — When the instrument enters the crural arch you will be sensible of resistance After open.g the sac you cannot go wrong if you consider the stricturing parts as a circle, on the upper part of wh.ch the Spermatic cord & Epigastric artery decussate, the former lying internally, & the latter externally, & posteriorly the great B'vessels, all wh.ch must be carefully avoided —

M. Gimbernat proposes to divide this ring next the Os Pubis & this may be done with perfect safety — Monro directs the incision to be made in a line direct towards the Navel wh.ch may also be done with safety.

It may also be cut outward. A very small incision in the part perform.g the stricture is sufficient to liberate the intestines.

Umbilical Hernia

In this species of Hernia we find it difficult to prevent the protruded part from increasing - Always endeavour to return the Intestines & to prevent their protruding by means of a truss - this shd be so constructed by means of an elastic Iron, Steel, or Brass hoop as not to press on any other part of the abdomen but the Umbilicus - the point of resistance to the pad of this truss is the back of the Patient - For a full description I refer you to Mr Hey's "Surgical Operations"

The protruded parts, like the other species of Hernias are liable to Stricture, when this occurs we must use all the remedies already mentioned in Bubonocele, in order to return the protruded parts: if these fail the Strictuing parts must be divided, but you are to recollect that the Hernial Sac is often very thin so that you can often see the bowels thro' it

the incision is to be commenced not at the centre of the tumour, but above when it is thicker than at the Middle & anterior part After exposing the upper part of the Hernial Sac you carry on the dissection until you see the tendon of the Naval wt joins the stricture. On opening the Hernial Sac you pass yr finger in & grasping the Scalpel on it with frequent strokes you make the division. The protruded parts being reduced a ligature is to be passed round the neck of the Hernial sac moderately tight so as to bring the parts into Contact By this means you close the Cavity of the Abdomen & leave no reason to apprehend peritoneal inflamn. In other respects the wound is to be dressed as before directed

I never attempted this Operation but once, & in that case the woman's fear was so great, that the moment I touched her with the knife she nearly

fainted, & then by means of the taxis the intestines were happily returned —

Dr Dorsey performed the operatn at the alms house — several tendinous threads had prevented the reduction of the intestine. they were all divided & the intestine returned but the patient died a few days after

Before I entirely conclude the subject of hernia, it is proper to mention that besides those already mentioned there are other different kinds — there are instances of hernia occurring in the vagina & perineum — also when the protusion appears at the ischiatic notch thro' the diaphragm — in the labia pudenda — Mysentery & Mesocolon — in the small of the back when the kidnies have been protruded: & lastly when the intestines have been wrapped round each other —

There are also varieties in hernial sacs — sometimes there may be more than

one, at others none at all — In some cases of Old Hernia the sac is very thick; & again Hernia of the bladder have no sac at all on acct of the Peritoneum not surrounding it — To enter minutely into all these varieties cannot be expected in a course of Lectures — I refer you to Authors —

Of the Stone

Calculus Concretions form in many different parts of the body, lungs, salivary glands, bowels & gall bladder, but most frequently in the Organs of Generation & discharge of Urine.

The matter forming Calculus is very abundant in the urine of some persons with particular constitutions, but the most healthy urine contains a sufficiency to form a stone all that is necessary to the formation is a Nucleus — this may be any foreign substance accidentally introduced into the system, as bullets, pins, pieces of bougie, or even a clot of blood.

Upon sawing thro' a stone after its extraction, its lamella are found to vary in Density, Colour & Consistence, some dark others white &c

Stones are found in the Pelvis of the Kidnies, the Ureters, Bladder, Prostrate gland & Urethra, in all ye situations

they occasion great pain - The Stone I believe generally begins to be formed in the kidnies, & passes thro' the Ureters to the bladder. - When the Stone is in the kidnies the pain is in that Organ - If the stone be not too large to pass the Ureters, the urine will transmit it to the bladder. - As the stone descends along the course of the Ureters, there are pains in the back & loins, great irritation with rigors retchings to vomit, flatulency & colicky pains. - During the time the Stone is in the Ureters the pain is lower & more acute, that part of the Ureter above the Stone is dilated. Mr Bloomfield very well describes the Symptoms. The pain in the back is suddenly relieved when the stone passes into the bladder, but shortly after if not discharged, another set of Symptoms is produced -

During the passage of the Stone thro' the Ureters the best remedies are copious V.S. af-

towards demulcents, Opiates & warm bath. These remedies very speedily remove the excruciating pain —

After the stone has got into the bladder, the ~~bladder~~ Patient with the hope of discharging it thro' the urethra shd drink plentifully of diluting drinks, & discharge his urine on his feet standg with his body a little bent forwards Make frequent attempts & invacious directions — In this way the patient may have the good fortune to discharge the stone along with the urine, thus prevent the necessity of performing a severe & dangerous Operation —

Symptoms of stone in the Bladder

If the above means do not succeed, the symptoms become severe, excruciating pain with an itching burning sensation in the part, the urine when flowing in a full stream suddenly stops owing probably to the stone

falling into the neck of the bladder, & stop-
ping the passage of urine thro' the bladder &
urethra. The urine is pale & turbid, of a
bad smell, depositing after stand.g a white
mucous sediment sometimes mixed with
pus — the urine is sometimes mixed with blood,
this generally occurs fr. violent exercise. An
uneasy sensation, & a sensation of itching thro'
the whole course of the urethra fr. its commence-
ment to its terminat.n at the glans penis.
Later in the disease, Tenesmus, Costiveness, Fla-
tulency & indigestion occur, the fever runs
high, the patient becomes extremely weak,
& at length the lamp of life is extinguished
by the constant uneasiness, pain, fever, &c.
None of these symptoms however unequivocally
prove the existence of a stone in the bladder
as they may arise fr. other causes. As an in-
flam.n of the neck of the bladder, or in the
urethra — Or an ulcer in the neck of the blad-
der or in its neighbourhood. Hemorrhoidal

tumours; I in one case that came under my care nearly all the above Symptoms existed for a tumour in the rectum — the discharge of pieces of Calculi along with the urine is one of the most unequivocal Symptoms of Stone in the Bladder, but even this is not a certain one, as all the fragmts of stone may have come out leaving none in the bladder. Stones even of a considerable size may exist for a long time in the bladder without exciting disease, or the least inconvenience — Large Stones have been extracted after death from persons who never had any symptoms of stone in their lives.

As all the symptoms are more or less equivocal, to be certain of the existence of a Stone you must sound the Patient, as it is called, that is, introduce an iron instrument curved to suit the course of the urethra to the bladder. — To proceed to this operation we must have sounds of different

sizes. Lay the Patient on his back, dip the Sound in warm Oil, & introduce it into the urethra with its concave surface towards the Pubis. Sometimes considerable difficulty is experienced in introducing the Sound, but we must repeat the trials. In this case the Surgeon shd begin its introduction with the concave surface towards the Os Pubis. Let it revolve on a point so as not to throw the membranous part of the urethra into folds; in this way it may sometimes be introduced after the first method has failed. If this does not succeed introduce the finger well Oiled into the Rectum —

After the Sound is introduced, you will generally find the Stone in the most depending part of the Bladder, as the Patient lies upon his back — if not move the instrument about in various directions, till you find it — If you don't find it on the first trial, sound again & again. — It may some-

times be raised so as to be within reach of the Sound by introducing the finger well Oiled into the rectum — & raising the Pelvis will detect it by its falling from the fundus of the bladder — In most instances when detected, the striking of the sound against the stone may be distinctly heard. You must be careful not to judge of the existence of stones by the sound passing over a rough surface as the folds of the bladder will sometimes communicate that sensation

When the existence of the Stone is ascertained nothing but the Operat^n of Lithotomy is equal to its removal — Every attempt hitherto made to dissolve the stone by means of injections thrown into the bladder has been unsuccessful — probably the substance of the bladder w^d be sooner dissolved were the injections strong enough. Soap pills, Carbonate of soda, Carbonic acid gas, lime water, Uva Ursi &c have all given tempo=

rary relief, easing pain for a short time; but if the stone be not excepted, case seldom continues long —

During a paroxysm of stone attended with pain fever &c Vs of warm bath Demulcents & opiates are the proper remedies —

When in its passage thro' the urethra, a small stone sticks fast in the passage, it occasions suppression of urine & great pain It is to be extracted by a probe flattened & a little bent at the end; by pushing it up the urethra till the curved end gets behind the stone, then withdraw it & it will bring the stone along with it —

Mr Hunter has invented an instrument for the purpose wch is very useful — they are a pair of spring forceps, you introduce it covered with a Canula till you arrive at the stone, you then withdraw the Canula a little & the blades of the forceps will open — After you get the stone between

the forceps push back the Canula till the blades of the forceps firmly grasp the Stone — these forceps have never succeeded with me.

If both these methods fail, an incision is to be made directly on the Stone thro' the side of the Urethra thro' wh the Stone is extracted. The incision must always be made very large in order that the Calculus may be extracted with ease & prevent the flow of Urine into the Cellular texture.

Pithotomy

Before proceeding to the Operat^n it is necessary, particularly if the Patient is Plethoric & Robust, to prepare him for it by an antiphlogistic regimen for 6 or 8 days previous, & the day before the operation it is useful to evacuate the bowels by a mild purge, Castor Oil is well adapted — About 3 hours before, wash them out by a Clyster, & an hour previous to the operat^n it is useful to exhibit a dose of Laud: to allay the pain

attending it. The Patient shd also retain his urine so as to have the bladder distended, & if he can't do this, a string shd be tied round the Penis. The Perineum shd be shaved the day before.

Before proceeding to the operat^n it is proper again to introduce the Sound well oiled — There is generally some obstruction at the prostrate gland, but it may be generally introduced by a little perseverence. Move it about till you find the Stone. Having thus ascertained its existence beyond all doubt you may proceed.

The Instruments & other necessaries for the operat^n, w^h sh^d always be at hand before we attempt to make the smallest incision, are the follow^g

1 A Table of convenient size & height, not too wide, so that the assistants may have firm hold of the Patient. A common dining table with the leaves hanging down

P.

answers very well

2d Cover this with 3 blankets & a Pillow

3 Over these a Sheet, this shd be long enough to project almost to the Floor that it may cover the lap of the Surgeon during the Operation

4 Several basons of warm water & warm Oil in cold weather

5 Plenty of Sponges

6 Warm Oil — the best method to prepare it, is to fill a large glass with it & then place it in a bason of hot water —

7 Two fillets to tie the Patients Ankles & wrists together

8 A grooved director, exactly like a sound in every respect but that of having a groove in its Convex part — the groove must be quite smooth —

9 A Scalpel

10 A Straight sharp pointed Bistory secured open at the handles with well waxed thread.

11 A Gorget for dividing the urethra and neck of the bladder. This must be so constructed that it is removable from the handle or beak by what means it can be made very sharp, & reaffixed to the beak & retained there by a Screw. — Ascertain that the beak of the Gorget plays with great ease in the groove of the Staff, for if too large it will impede or spoil the Operation. — It is of consequence that that portion of the blade of the gorget near its beak which commences & continues the incision thro' the upper part of the urethra & neck of the bladder should have a fine sharp edge, for if blunt & dull it tears instead of cutting & throws the urethra into folds, by doing which danger is incurred of dislodging the beak of the gorget from the groove of the Director, in which case the rectum would most probably be wounded, & this accident in most instances would prove fatal by opening a communication between the rectum & bladder

12 Forceps of different sizes — a pair of very small ones is sometimes very convenient & one pair curved

13th A kind of long scoop wh may occasionally be used as a 3d blade to the Forceps in extracting the Stone, at other times to scoop out small fragmts of stone when it is broken in pieces

14 A pipe & syringe to wash out small fragmts of stone wh may arise from its breaking

15th Plenty of needles & ligatures, a tenaculum, towels, & compresses —

16 A pair of very strong forceps with a screw to bring the ends forcibly together by wh any pressure may be applied. these are used where the Stone is too large to be extracted, for the purpose of breaking it. I have never had occasion to use them, but it is nevertheless necessary to be provided with them

All things being laid in order so that whatever is wanting during the operation may be immediately had we may proceed —

The patient is laid on his back on the Table, & the Surgeon introduces the grooved director or Staff — The Patient is made to take hold of his feet with his hands, & in this manner he is to be secured by the Fillets — Never fail to do this — Two assistants must hold the Patient by applying his knees in their Armpits, & grasping his feet with their hands —

The Surgeon taking hold of the Staff turns it towards the right groin thus causing its convex part to project in the Perineum — It is held there by an assistant. — An incision 6 inches long must now be made by the scalpel, thro' the Skin & Cellular membrane, beginning above very near the raphe, & running in a line to about half way between the tuberosity of the Ischium & Anus; he is then to dissect until the point of the prostrate gland is in view — The object of the first incision is to expose the prostrate gland & Urethra — The rectum is to be pulled

on one side for fear of wound^g it. To lay the groove of the Director bare that the Gorget may pass in after the incision made thro' the skin & cellular membrane by the Scalpel; introduce a sharp pointed Bistory thro' the groove of the Director, with the back to the anterior part of the gland & the point to the membranous part of the urethra, push it in outwards & backwards in a direction from the Anus to the Scrotum, till as much of the groove of the Director is laid bare as is necessary - In this way the groove of the director is laid open in 2 cuts as soon as the groove is thus laid bare; the Surgeon takes the handle of the Staff from the hand of the assistant & brings it at right angles to the body of the Patient; he then introduces the beak of the Gorget into the grooved staff, & by carrying it directly forwards, divides the upper part

of the Urethra, the prostrate Gland, & the side of the neck of the bladder — The flow of urine will inform you when you have cut into the Bladder. While making this division take care to depress the handle of the gorget to prevent its beak from slipping out of the groove — After the gorget has been introduced into the bladder withdraw it carefully & speedily, taking care to do it in such a manner as to prevent its cutting as it comes out — Let the staff remain till you have ascertained with yr finger the size of the incision into the bladder, & also the size of the stone — Because you may readily enlarge the opening by passing the Gorget in the Grooved Staff if necessary a second time, without incurring the difficulty of a second introduction of the staff if it shd not be sufficiently large in the first instance. The grooved staff then is the last instrument to be withdrawn. — The Forceps is now

to be introduced & carefully search for the stone, elevate the handle so that the depend-ing points of the Forceps may touch on the de-pending part of the bladder as the Patient lies upon his back where the Stone will gen-erally be found, unless adhesions have to-ken place — When it is found we must endea-vour to replace it lengthwise in the For-ceps that its smallest diameter may oppose the wound, this may be done by introdu-cing the finger — it is then to be gradually extracted — Whenever the stone is large this is the most difficult part of the operation the scoop forceps must be introduced to act as a third blade, made to apply accurately on the side of the other Forceps — these are to be managed with both hands

Having extracted the stone feel for others & extract as many as are found — If the stone be rough, it is probable no more are there; at all events the Surgeon may ascertain this

with his finger, or a female sound, wh shd be dipt in Oil

If in extracting the Stone be broken into fragments every piece may be extracted by repeated introductions of the small Forceps — Very small fragments may be scooped out, & still smaller may be washed out by a Stream of warm water injected with the pipe & Syringe —

It now remains for the Surgeon to examine the hemorrhage; some arteries must be cut as the Artery in the Perineum, or bulb of the Urethra — these must be taken up & a ligature passed round them — But the Internal Pudic Artery at the Ramus of the Ischium is liable to be cut, in wh case you are to pass yr Finger in the wound at the Ramus of the Ischium & feel the Pulsation, when passing the Tenaculum under the Artery & flesh, you put a ligature over the point of the Tenaculum including the

flesh with it — this I have formerly done, but I have improved on this method of tying up the Pudic or any other Artery wh cannot be seen — A pair of very nice fine forceps are made gradually curved at the point so as to resemble a continuation of the common curved needle — the eye of the needle being previously armed with thread is received into the tip end of these forceps — the extremities of the handle are to be firmly tied so as to press the needle sufficiently firm at its point, the pulsating artery is then to be felt with the fore finger, along wh the needle is to be passed as a director — It is then passed round the vessel including the cellular membrane &c — When it is pushed thro' far enough cut the thread at the handle, the needle will remain, & the Artery is to be drawn tight in the usual way —

If the Patient be so exhausted that there

is no pulsation, then compression is to be made with the finger & cordials given to restore the circulation — If that fails the French Surgeons advise the introduction of a Canula, carefully covered with soft linen, upon the wound to make compression on the Artery; but it is inconvenient, as the point of the instrument may go to one side thro' the cellular texture producing Gangrene & mortificat^n. It is better & more safe first to introduce a Catheter for the passage of urine then the plugged Canula — It is certainly best to tie a ligature rather than trust to the Canula; but this is extremely difficult to effect in so small a wound. — I have succeeded with a small double Canula with a wire drawn thro' it, then push the wire over the end of the Tenaculum & secure the Artery.

The Operat^n is now finished, the wound is to be cleared f^m Coagulated & other extraneous matters & dressed with simple Cerate

Introduce a little way up the wound a small piece of lint — the Patient must be untied & laid on a bed on his left side — the bed th^d be covered with a blanket folded 4 times & over that a Sheepskin. Put the thighs close together & keep them so, & put a sheet rolled up on one side under the Patient, that as fast as the part he is lying on becomes wet with the urine, a dry part may be pulled under him. — the Patient must be kept as still as possible — A dose of Laud: th^d be given after the Operat^n & the Surgeon th^d be speedingly attentive for the first 48 hours. — If the Patient appears to sink a warm bath will very much relieve him; & if he complains of much pain about the wound an injection of flaxseed tea & Opium will relieve it — Be careful to avoid inflam^n — let the Patient abstain f^m Animal food, & for some time use nothing but Gum & Mucilage. — If in spite of all your efforts

inflam^n^ sh^d^ supervene we must treat it as already directed under that head.

Operation for the Stone in Women.

This operat^n^ is performed by simply introducing a director into the Urethra – the Gorget is then to be introduced into the Urethra & bladder by sliding the beak along the groove – the stone is then extracted as in Males.

During either of these Operations the Patient sh^d^ be strictly enjoined not to heave or strain during the presence of the Gorget in the bladder, & you sh^d^ never introduce the Gorget while he is straining as it may greatly injure it.

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